

EXHIBIT I

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

**SYMBOLGY INNOVATIONS, LLC,
Plaintiff,**

vs.

**ADAMS EXTRACT et al.,
Defendants.**

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**LEAD CASE NO.
2:15-cv-01169-JRG-RSP**

2:15-cv-01170-JRG-RSP

EXPERT REPORT OF KEVIN BERISSO

I, Kevin Berisso, submit the following expert report on behalf of Defendant AETNA INC., in this lawsuit brought by plaintiff SYMBOLOGY INNOVATIONS, LLC.

A. Introduction

1. Counsel for Defendant has asked me to evaluate the validity of claim 1 of each of U.S. Patents No. 8,424,752, No. 8,651,369 and No. 8,936,190 under 35 U.S.C. §§ 102 and 103(a). As I explain below, based on my personal and professional experiences, my review of the relevant patents, including their file histories, as well as other documentation, I conclude that claim 1 of U.S. Patents No. 8,424,752, (“ ‘752 patent”) No. 8,651,369, (“ ‘369 patent”) and No. 8,936,190 (“ ‘190 patent”) are invalid pursuant to 35 §§ U.S.C. 102 and 103(a).

B. Background and Qualifications

2. My C.V. is attached as Exhibit A.

3. I received a Bachelor of Science degree in Industrial Technology from Ohio University in 1994. While at Ohio University, I took a number of computer science courses. Computer science courses I took included Introduction to Computing (FORTRAN), Computer Programming I, Computer Programming II and Unix & C in addition to an automatic identification class. A degree in Industrial Technology (now often called Engineering Technology) prepares the graduate to solve problems. Students are introduced to both manufacturing and business processes, allowing them to quickly internalize current activities and be able to provide value-added improvements. Classes include manufacturing processes such as metal machining, wood processing and metal casting in addition to business and management classes. Additional classes include computer programming, marketing, basic management, computer integrated manufacturing, operations management, quality assurance and computer numerical control (for manufacturing processes) classes. Common jobs for graduates include manufacturing

management, systems integration, technical sales and various engineering positions (manufacturing engineer, quality engineer, project engineer, etc.).

4. A Master of Science in Industrial Technology can be best described as a refinement of the Bachelor of Science in Industrial Technology. The emphasis is on the application of standard manufacturing and business processes. Classes included advanced statistics, creativity and ideation, production planning and automation integration. For my MS degree, I elected to do a major project, which integrated bar coding as a method for the automatic routing of bins on a conveyor line.

5. A Doctorate of Philosophy in Technology Management with a Manufacturing Systems concentration focuses on the implementation and application of appropriate technologies to a given business challenge. The program consists of a technology core, a research core and a technical specialization. The technology core studies in Trends and Development of Technology, International and Cultural Technological Development, Technological Assessment and Innovation and Legal Aspects of Industry (my specific course work centered on intellectual property rights). The research core included Advanced Research Methods, statistical Analysis in Technology Research and a seminar in Technology Processes. My dissertation was on coordinate metrology – the process by which automated measurements of physical parts is conducted.

6. From 1996 to 1998, I worked for Applied Tactical Systems (“ATS”) of New Jersey doing bar code systems integration. ATS served Fortune 500 companies, providing them with custom warehouse management software. The software was used to ship, receive, count, move, and process materials within a company, often reporting the aggregate results to backend enterprise wide systems. Activities included software programming, project management, system design, database design and management, system testing, technical support, and end-user training. With

respect to system design, I was often responsible for converting business processes into functional program and database designs. From the database side, I often made recommendations and updates to the database designs, both during development and in the field.

7. In 1998, I joined Delphi Automotive as a manufacturing engineer. My job responsibilities included building machines for manufacturing car batteries. As a part of this job, I was responsible for the evaluation of appropriate technologies, the design and building of the equipment and the testing and training on the use of the equipment.

8. My Ph.D. dissertation (thesis) addressed the ability of coordinate measuring machines (robotic measuring equipment) to repeatedly obtain measurements from a part that is placed in any orientation within the measurement envelope.

9. Over the years I have taught a wide range of topics including automatic identification (bar coding, magnetic stripe, biometrics, radio frequency identification, etc.), facilities layout, computer programming (Visual Basic, C#, Java), database design, data structures, computer usage (computer hardware, MS Word, MS Excel, MS Access, etc.), robotics, and industrial organization. During many of these classes, I have included bar coding and RFID as a topic, going as far back as when I taught the Industrial Organization class when working on my MS from Indiana State University. As a part of the robotics and automation class at Central Missouri State University (now the University of Central Missouri), I began development of an automatic identification lab (where AutoID is the primary research and/or educational objective) obtaining equipment and software from various companies. While at Ohio University and again here at the University of Memphis, I have continued my efforts of building and expanding AutoID labs. As can be seen from my CV, I have secured numerous hardware and software donations from

a wide variety of companies allowing me to become familiar with a variety of software and products currently used in the industry.

10. I have been doing consulting work for more than 20 years. Since graduating from Ohio University in 1994, I have been involved in industrial training and systems development. While working on my master's degree at Indiana State University, I engaged in computer aided design training and contract work. While working on my Ph.D., I engaged in various AIDC consulting opportunities including the development of custom AIDC based software. I have done computer programming training while working at Delphi Automotive. Upon my return to Ohio University in 2005, I have been involved in consulting and technology transfer activities with a wide range of companies – providing information on bar code selection, system design, the integrating of bar codes and radio frequency identification with external sensors and actuators. This work has continued with my move to the University of Memphis where I am currently employed. I have authored a number of custom applications as well as offering standardized software packages.

- a. Beginning when I returned to Ohio University in 2005, I became involved in consulting and technology transfer activities with a wider range of companies – providing information on bar code selection, system design, and the integration of bar codes and radio frequency identification with external sensors and actuators.
- b. I have authored a number of custom applications and within the last two years have begun offering standardized software packages that center on RFID. I have written the software development kit (“SDK”) – the software library that allows programs like Visual Basic and C# to talk to RFID

hardware – for Microelectronics Technology Incorporated’s (“MTI”) RFID ME™ family of readers. I have also authored custom translation software that allowed older, less sophisticated software that only works with COM objects to access current .NET libraries.

- c. As of the writing of this report, I have developed RFID software solutions using multiple hardware vendors (Intermec, Matrix/Symbol Technology/Motorola Solutions, Alien Technology, MTI, Feig) for a wide number of situations that range from simple data collection tools and asset tracking to race management and tag validation. I have developed these solutions in various programming languages, and in some cases have developed solutions for customers in multiple programming languages. These solutions have saved data to databases as well as text and Excel files, and some have had the ability to generate complex reports showing trends and exceptions.
- d. I have also written software to convert the GS1 EPCglobal encoded data back to its base GS1 data (GTIN, serial number, etc.) that works in both Microsoft Excel and in stand-alone applications. My software has been used by GS1 to demonstrate RFID functionality and has been part of a featured hardware demonstration on RFID.NET.
- e. I have developed proof of concept applications for use with cellular enabled mobile devices that allowed the user to scan RFID tags on assets and both determine their anticipated location and update their actual locations. The

intended purpose was to enable companies such as automotive sellers or the gas/oil industry to be able to track high dollar assets.

11. In 2005, I returned to Ohio University and took over the Automatic Identification and Data Capture (AIDC) Lab. I was the Director of the AIDC Lab from 2005 until the spring of 2013, when I left Ohio University. The AIDC Lab engaged in education, research and technology transfer activities related to the automatic identification industry. In addition to an automatic identification class and a radio frequency identification class, the AIDC Lab offered a weeklong crash course into all of the AIDC technologies. While the director of the AIDC Lab, we conducted multiple radio frequency identification based tests. These tests included performance testing of multiple brands of RFID readers, testing various types of RFID tags, and testing RFID tag performance at -100 F°. In 2012, I conducted testing on QR Code symbols that have been artistically modified to determine if they perform sufficiently such that an average smart phone equipped consumer would still be able to scan the symbol. Other lab research has included the original testing of 1D and 2D bar code symbologies for character substitution rates including PDF417, Code 16K, UPC and Datamatrix. Additional testing with which I have been involved has included scanning millions of bar codes with multiple types of scanners to determine the impacts of bar code size on scan rates, including the use of cell phones as a scanning device, determining the character substitution rates of Interleaved 2 of 5 and radio frequency identification performance testing.

12. In 2013, I moved to the University of Memphis where I currently teach automation classes, a database and data structures class (which includes programming in Java), basic electronics, and an automatic identification class. I brought the AIDC lab from Ohio with me. The new AutoID Lab at the University of Memphis has the same goals and anticipated activities as

what was done in Ohio. Current research areas include big data, EPCIS and the Internet of Things, as well as involvement in the newly formed RAIN industry alliance (a group whose goal is to “promote awareness, education and initiatives to accelerate UHF RFID...”) and the AIM RFID Experts Group (REG) and the AIM Internet of Things committee. I have also continued my AutoID research, most recently working on a NIST traceable bar code scanning and evaluation system (for linear bar codes such as EAN/UPC bar codes) and am in the process of doing the most exhaustive publicly disseminated study of the robustness of two-dimensional (2D) matrix symbologies for which QR Codes are included. To date we have scanned more than 75 million symbols for a total of more than 2.6 billion characters. At present, I am working with the GS1 Bar Code and Identification Technical Group to develop a new set of tests that will benchmark and then stress test many of the current and newly released scanners (including some of the newer 2D point of sale scanners) that are on the market.

13. In 2012, my work in Auto ID was honored by the automatic identification community as a whole through the presentation of the Ted Williams award. This award is given annually by AIM Global to a professor or student in recognition of innovative and exceptional contributions that can further the growth of the industry through his or her work as a teacher, researcher, and entrepreneur. In 2013, my efforts within the automatic identification industry were again recognized with my induction into the AIDC 100. The AIDC 100 is “a not-for-profit, self-sustaining, non-political, international organization of automatic identification and data capture (AIDC) professionals and others who have significantly contributed to the growth and advancement of the industry.” Most of the members of this organization have been involved in the industry for over 30 years – and many have founded their own AIDC companies or developed technologies that are in use today.

14. In the Spring of 2016, my efforts within the automatic identification industry were once again recognized when the Department of Engineering Technology was awarded the AIM North America Business of the Year award in recognition of outstanding contributions and service that have furthered the growth of the AIDC industry.

15. I have served as an expert witness in two other automatic identification cases, am involved with various international technology committees, and have served as a judge for the RFID Journal Live awards since 2009.

C. Compensation

16. I am being compensated at \$400/hour for my services in connection with this case.

D. Materials Considered

17. Attached as Exhibit T is a list of the materials considered in preparing this report.

E. Person of Ordinary Skill in the Art

18. I understand that the validity of a patent is judged by a person who is deemed to be one of ordinary skill in the art. For purposes of the '752, '369 and '190 patents, I believe that one of skill in the art would have a Bachelor of Science in Electrical Engineering, Computer Science, Industrial Technology, Engineering Technology or similar education, an understanding of the various types of bar codes, their attributes and functionality, and at least 2 years of experience in their field of study, or equivalent practical experience in the relevant field.

F. Relevant Legal Standards

19. I am not an attorney. My understanding of the legal standards to apply in connection with this report was provided to me by counsel for Aetna. In preparing this report, I have attempted to apply the following legal standards.

20. I have been informed that 35 U.S.C. §§ 102 and 103(a) describe the law regarding the conditions for patentability with respect to novelty and non-obviousness.

21. I understand that in construing words and phrases in a claim, those words and phrases are generally given the meaning that they would have to a person of ordinary skill in the art on the effective filing date of the patent application.

22. I understand that the parties agreed that the terms of the asserted patents require no construction. I also understand that I am therefore to use the plain and ordinary meaning of the terms.

23. I reserve the right to update my opinions should the Court, at some point, adopt a construction that is different from those applied in this report.

24. I understand that a patent issued by the United States Patent and Trademark Office is entitled to a presumption of validity. To overcome the presumption of validity, the party challenging the patent's validity must present clear and convincing evidence that the patent claims are invalid.

25. I understand that a patent claim is invalid as anticipated if a single piece of prior art includes each element of the claim. There must be no difference between the claimed invention and the prior art, as viewed by a person of ordinary skill in the field of the invention. If a single piece of prior art does not expressly disclose each element of the claim, I understand that it may still anticipate a claim if the elements of the claim were inherent in the prior art. In making this determination, the claims are to be read in the context of the patent specification.

26. I understand that a patent claim is invalid as obvious if the differences between the subject matter sought to be patented and the prior art are so insubstantial that the subject matter as

a whole would have been obvious, at the time the invention was made, to one of ordinary skill in the relevant art.

27. In determining whether a claimed invention is invalid for obviousness, I understand that one should consider: (i) the scope and content of the prior art; (ii) the level of ordinary skill in the relevant art; (iii) the differences between the claims invention and the prior art; and (iv) whether the claimed invention would have been obvious to one of ordinary skill in the art in light of those differences. I also understand that hindsight must not be used when comparing the prior art to the inventions for obviousness.

28. I am informed that obviousness may also be shown by demonstrating that it would have been obvious to combine the teachings of more than one item of prior art. In determining whether a piece of prior art could have been combined with other prior art, or with any other information within the knowledge of one of ordinary skill in the art, I also understand that one may consider the following factors:

- (a) Combining prior art elements according to known methods to yield predictable results;
- (b) Simple substitution of one known element for another to obtain predictable results;
- (c) Use of a known technique to improve similar devices or methods in the same way;
- (d) Applying a known technique to a known device or method ready for improvement to yield predictable results;
- (e) Applying a technique or approach that would have been “obvious to try,” choosing from a finite number of identified and predictable solutions, with a reasonable

expectation of success;

(f) Known work in one field or endeavor may prompt variations of it for use in either the same field or in a different field, based on design incentives or other market forces, if the variations would have been predictable to one of ordinary skill in the art; or

(g) Some teaching, suggestion or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference to combine prior art reference teachings to arrive at the claim invention.

29. I understand that certain objective factors, known as “secondary considerations,” may also be taken into account in determining whether a claimed invention would have been obvious.

30. I understand that in determining whether the prior art “teaches away” from an invention, the nature of the teaching is highly relevant and must be weighed in substance. For example, a known or obvious combination of features does not become patentable simply because they have been described as somewhat inferior to some other known combination of features for the same use. Generally speaking, I understand that prior art will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant’s invention.

31. I understand that the person of ordinary skill in the art is a hypothetical person who is presumed to be aware of all of the pertinent art. The person of ordinary skill may be able to fit together the teachings of multiple patents employing ordinary creativity and the common sense that familiar items may have obvious uses in another context or beyond their primary purposes. The person of ordinary skill faced with a problem is able to apply his or her experience and ability to solve the problem, and may look to any available prior art for the solution.

32. I have been informed further and understand that a patent specification must contain written description of the subject matter of the claims. I have been informed and understand that patent specification must describe the manner and process of making and using the subject matter of the claims in terms as to enable a person of ordinary skill in the art to practice the claimed invention. I further understand that patent claim is invalid if the patent specification does not satisfy the written description and enablement requirement for the claim.

G. Overview of Automatic Identification and Data Capture

33. The field of automatic identification and data capture (AIDC) includes numerous technologies including bar codes, radio frequency identification, magnetic stripe, biometrics, etc. In general, these technologies are designed to enable the user to be more efficient, more accurate, faster and in general better at their jobs. Of these technologies, the average person will probably have had the most exposure to bar codes with magnetic stripe being a close second, at least in the United States.

34. To someone who is conversant in AIDC, one of the tenets is that a bar code is functionally equivalent to a radio frequency identification tag, which is functionally equivalent to magnetic stripe in terms of data. And while each of these technologies is used in a slightly different way, with advantages and disadvantages to each, at the end of the day the goal is that each is what is referred to as a data carrier – which is just a way to encode or encapsulate information. And just as writing this sentence in English or in French results in the same message, if a piece of information is encoded in a bar code or a magnetic stripe card the end result is that the underlying data or message is still the same.

35. Bar codes

36. A bar code symbology refers to the "language" in which the bar code is encoded.

Bar codes have been around since the early 1970's and have become ubiquitous. Everything from purchases at the grocery store to the medical field and even NASA involve the use of bar codes. The bar code was arguably first patented in 1949 by Woodland and Silver. The first retail use of the bar code was a pack of Wrigley's gum scanned in 1972 in Cincinnati, Ohio. The UPC Code is probably the most well-known symbology. Other symbologies include: Code 39 (used in the automotive industry), Code 128 (used in supply chain management), Plessey (used in libraries around the country) and Interleaved 2 of 5 (used in supply chain management).

37. Within the field of bar codes there are generally two or three categories in which one can group the various types. These different types of bar codes, referred to as symbologies, are nothing more than different ways to represent information. And just as Arabic, German, kanji and English are different visual representations for information so too are EAN/UPC, data matrix, Code 128, QR Codes, Maxicode, and PDF 417. The two primary categories in which these various bar codes can be grouped are linear and matrix symbologies.

a. **Linear Symbologies.** These are symbologies which are categorized as having no unique information as one moves up and down the height of the symbol. Symbologies such as EAN/UPC, code 128 and others have a vertical height but that height is only there to make it easier to scan the overall bar code. If one were to scan the very top, the middle or the bottom the underlying information is the same. In general linear symbologies do not have the ability to auto correct. They may have a check digit which allows them to determine if the decode process was successful.

b. **Matrix Symbologies.** These are symbologies which are categorized as having unique information as one moves up and down the height of the symbol.

Symbologies such as data matrix QR codes and Maxicode embed meaning in both the horizontal and vertical dimensions of the symbol. Maxicode, which is used on UPS packages, uses the location of each hexagon to denote a piece of information. So, as one looks at the location of each hexagon in both the horizontal and vertical directions the presence or absence of a hexagon at any given location has significance. Additionally, most if not all matrix symbologies employ some sort of error correction allowing for missing parts of the bar code to actually be reconstructed.

c. The first matrix bar code (Snowflake Code) was invented in 1981, with many of the currently seen matrix bar codes being invented in the late 1980s and early 1990s. Common matrix symbologies include: Maxicode (used by United Parcel Service for tracking and automated routing), Data Matrix (used in medical and packaging industries), QR Code (used in e-commerce and marketing), Aztec Code (used by airline industry and scanner configuration) and Microsoft Tag (used for marketing and product information).

d. **QR Codes.** The QR code (quick response code) was developed by Denso Wave and released in 1994. Originally adopted by the automotive industry, the QR code eventually made its way into marketing efforts and wider adoption by 2002. As a result of the efforts of people in Japan and around the world, the QR code continues to evolve and adapt. At this time there is the original black and white QR Code, there is a Micro QR Code, there is an iQR Code, the SQRC (secure QR Code) and the Frame QR.

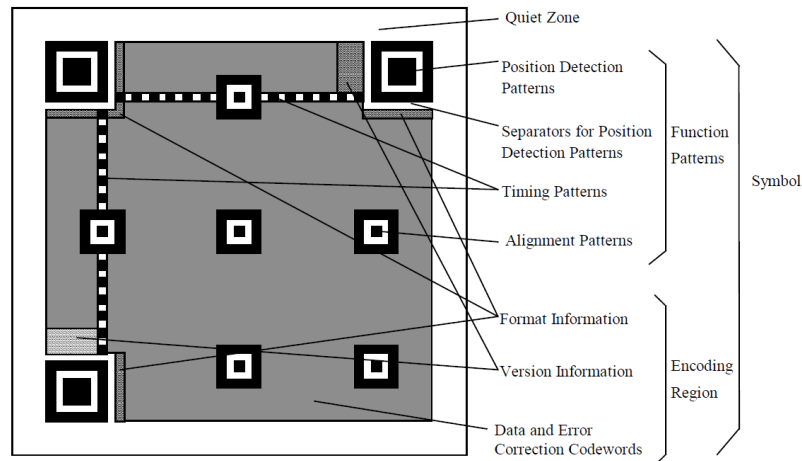


Figure 1. The structure of a QR Code (*ISO/IEC 18004:2000(E)*).¹

e. The traditional QR code is comprised of five areas (see Figure 1): the position detection and alignment patterns, timing patterns, the format information, the version information, the data codewords and finally the error correction code words.

f. **Stacked [1D] Symbolologies.** Functionally, these are 1D symbolologies that have been literally stacked on top of each other as a way to increase data density while still allowing for the use of laser and CCD based scanners. Examples include PDF417 (used by Federal Express for tracking and automated routing, postage for the United States Postal Service, RealID compliant drivers' licenses, Homeland Security and Transportation Security Administration), Micro PDF417 (used in healthcare industry), Codablock F which is based on Code 128 (used in healthcare) and some of the GS1 DataBar family (specifically GS1 DataBar Stacked, GS1 DataBar Expanded Stacked and GS1 DataBar Stacked

¹ Information technology — Automatic identification and data capture techniques — Bar code symbology — QR Code. (2000). *ISO/IEC 18004:2000(E)*.

Omnidirectional). Stacked symbologies are often classified with 2D bar codes since they offer a way to increase the amount of data displayed in a code.

Nevertheless, while these symbologies have vertical characteristics, the data is still extracted in a linear, 1D fashion where the row heights contain no data, which is why I have chosen to categorize them separately.

38. **Scanning technologies**

39. In general there are three scanning methods available for bar codes: (1) laser, (2) linear CCD and (3) imaging.

a. Laser scanning uses a LED light source that traverses across the bar code. The level of reflected light that is received back at the scanner is converted to one of two digital levels (on or off) and the resulting pattern of on and off signals is then translated back to the original message. Laser scanners can read 1D symbologies and some stacked symbologies, but cannot read matrix symbologies. Furthermore, laser scanners are often unable to read symbols through extremely reflective surfaces (such as behind glass) and cannot read symbols that have been projected towards the scanner due to the scanner's inability to read the reflected laser light levels.

b. Linear charged coupled devices (CCD) scanners use a single row of sensors that can rapidly read the reflected level of light from a bar code. The scanner is only able to read up to its physical width. CCD scanners can sometimes read bar codes that are behind glass, or that have been projected, but normally cannot since the scanner provided illumination often blinds the scanner. CCD scanners can read 1D symbologies and some stacked symbologies, but not matrix

symbolologies.

c. Imagers are functionally digital cameras. The scanner will take a picture of the bar code and then process the entire image. This has the advantage of allowing the scanner to read both printed and projected bar codes. Additionally, by turning off the scanner's illumination, bar codes behind glass can be read since the scanner is no longer blinding itself with its own illumination. An example of this would be in taking a picture of your-self in the mirror. If the flash on the camera is on, all that is seen in the resulting picture is the flash. If the flash is turned off, you can see yourself. Imagers are able to scan both linear and matrix symbolologies, including stacked symbolologies.

40. For one who is an AIDC expert, the term “scanning” or “reading” of a bar code is comprised of at least four distinct steps – all of which are necessary if the bar code is to be read.

a. The first step would be the capturing of the bar code. This can be accomplished by using one of the scanning technologies previously mentioned. The scanning of the bar code allows the bar code scanning system to obtain the visual image of the bar code. This step is required regardless of whether the symbol is linear, stacked, or a matrix symbol.

b. The next step is the detecting of a bar code within the captured image. There are numerous methods and algorithms available to help in the detection of the symbol. From the point of view of the symbol, the various symbolologies use various method in which to help with the determination of whether there is a valid symbol. As an example, QR Codes use a set of three symbol detection patterns. Maxicode (used by UPS) uses a bullseye pattern. Linear symbols use pre-defined

start and stop characters.

c. Once the symbol has been detected, the encoded information is reconstructed from the encoding pattern that has been employed by the symbology. For example, QR Codes use a series of eight blocks (modules) starting at the lower right corner of the symbol to encode eight bit code words. The on or off state of each module indicates the status of a bit. The eight bits are converted to a value that is mathematically processed to convert back into a predefined set of information. The sets of information can then be converted back into the original message.

d. The final step of the scanning process is to convert the decoded information back into a useable form that the can be consumed by the system requesting the information. For symbologies such as EAN/UPC and Code 39 this may be nothing more than a conversion to an ASCII formation. For other symbologies such as Code 128 – code set C there may be a lookup required and for matrix symbologies a combination of a look up and a mathematical calculation may be required.

e. To separate these four steps is functionally pointless as doing just one or two or even three will prevent the user from obtaining the encoded information despite what some may claim. To do so would be the equivalent of trying to drive a car without starting it first or walking through a door without providing for a way for it to be opened first.

H. Mobile Data Collection

41. Mobile data collection can arguably be shown as to have been around since at least 1993. As early as 1993, there were solutions that allowed one to collect information in batches using mobile equipment that could be connected to a dock that allowed for the downloading of the collected information. In the mid-1990's early Microsoft Windows mobile devices were using proprietary wireless solutions (the predecessor to WiFi) to communicate with back-end systems to allow fork truck drivers to scan bar codes while driving around a warehouse. Companies such as Symbol Technologies, HandHeld Products, Intermec, Telxon and others were offering mobile solutions well before 2000.

I. Overview of Mobile Wireless Devices

42. As early as 2000, there were a number of portable wireless devices that were able to display graphics. Included are the Palm (Palm Pilot) and Handspring (Visor) products, the Apple Newton and an increasing number of cell phones [Business Week, Oct. 25, 1999]. The Handspring Visor had a 2.25-inch square screen and the ability to add a wireless module that allowed the unit to connect to some of the various cell phone providers. Palm Computing's Palm VII offered wireless access and a screen that is approximately 4 inch tall by 2.75 inch wide. The Apple Newton, which was arguably ahead of its time, offered an 8.3-inch tall by 11.94 by 4.7 inches wide. All three of these devices were capable of downloading images and displaying the resulting data in both raw form and as a retrieved set of information (e.g. Web page).

J. Summary of Opinions

43. It is my understanding that plaintiff Symbology Innovations is alleging that defendants in this action are infringing U.S. Patents No. 8,424,752, No. 8,651,369 and No. 8,936,190, and further understand that Symbology Innovations is alleging infringement by Aetna of Claim 1 of each of the aforementioned patents. I have been asked to review and evaluate the

validity of independent Claim 1 for each patent under 35 USC §§ 102 and 103(a). As I explain below based upon my personal experiences in the area of bar code systems integration, including my academic research and professional experiences, my review of the asserted patents, including their file histories, as well as other patents and publications and other documentation, I have concluded that Claim 1 for each of the ‘752, ‘369 and ‘190 patents are invalid pursuant to 35 USC §§ 102 and 103(a). Specifically, all limitations of the asserted claims are found in each of multiple references when reviewed by one of skill in the art. At least the following references anticipate Claim 1 for each of the ‘752, ‘369 and ‘190 patents.

- Japanese Patent 2002-118680 (Ekusa et al.) published April 19, 2002, (hereinafter Ekusa)
- “Research and Development of Application of Mobile Barcode to Mobile Sightseeing Guide on Mobile Phone” (Chen, Weng) published January 2010 (hereinafter Chen)
- US Patent Application 2009/0108057 A1 (Mu et al.) filed October 24, 2008, (hereinafter Mu)
- U.S. Patent Application 2005/0252974 A1 (Mizukoshi) filed May 16, 2005 (hereinafter Mizukoshi)
- US Patent Application 2007/0205596 A1 (Mizuno et al) filed March 28, 2005 (hereinafter Mizuno)
- U.S. Patent Application Publication 2007/0215685 (Self et al.) published September 20, 2007

44. To the extent it is found that any of these references do not anticipate all elements of the asserted claim, the claimed invention in the ‘752, ‘369 and ‘190 patents would have been

obvious to a person having ordinary skill in the art well before the time the purported invention was made. I explain my reasons for the conclusions below.

45. The following is a cross reference of the references, the asserted patents and the exhibit letters.

Exhibit	Description
B	'752 - Ekusa patent
C	'752 - Mu patent app
D	'752 - Chen article
E	'752 - Mizukoshi patent app
F	'752 - Mizuno patent app
G	'752 - Self
H	'190 - Ekusa patent
I	'190 - Mu patent app
J	'190 - Chen article
K	'190 - Mizukoshi patent app
L	'190 - Mizuno patent app
M	'190 - Self
N	'369 - Ekusa patent
O	'369 - Mu patent app
P	'369 - Chen article
Q	'369 - Mizukoshi patent app
R	'369 - Mizuno patent app
S	'369 - Self
T	Reviewed Documents

K. Prior Art

a. Japanese Patent 2002-118680 (Ekusa et al.)

46. Japanese Patent 2002-118680 (Ekusa et al.) published on April 19, 2002. It describes ways for a person to use a portable telephone to obtain and view product information by taking a picture of a QR code appearing in an advertisement for the product. As more fully described in the exhibits to follow, Ekusa teaches that a digital image may be captured using a digital image-capturing device (e.g., “imaging part 18”) that is part of a portable electronic device (e.g., “portable telephone 7”). Ekusa further teaches that a symbology (e.g., “QR code 4”)

associated with an object (e.g., “advertising media 6”) within the digital image is detected using the portable electronic device. Additionally, Ekusa teaches that the symbology is decoded to obtain a decode string (e.g., “textual information” such as “advertisement identification information 32b”) using a visual detection application (e.g., “a program stored in ROM 24”) residing on the portable electronic device. Ekusa also teaches sending the decode string to a remote server (e.g., “WWW server 3”) for processing and that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “detailed information applicable to the advertisement identification code”). Finally, Ekusa teaches that the portable electronic device displays the received information on a display device (e.g., “display part 16”) associated with the portable electronic device.

b. Article “*Research and Development of Application of Mobile Barcode to Mobile Sightseeing Guide on Mobile Phone*”

47. Article “*Research and Development of Application of Mobile Barcode to Mobile Sightseeing Guide on Mobile Phone*” by Chen and Weng, published January 2010. It describes a way to use QR Codes that have been scanned by mobile devices as a method of providing interactive experiences from remote servers that can be experienced on the mobile device. As is more fully described in the Exhibits to follow, Chen teaches that a digital image may be captured using a digital image capturing device (e.g., “a camera over 0.3 mega pixels”) that is part of a portable electronic device (e.g., “mobile phone”). Chen further teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “printed media” such as “Magazine” in Fig. 3”) within the digital image is detected using the portable electronic device. Additionally, Chen teaches that the symbology is decoded to obtain a decode string (e.g., “text content” such as “<http://www.besthit.remix.com/%103231&43243244/>” shown in Fig. 3) using a visual detection

application (e.g., “software in the phone”) residing on the portable electronic device. Chen also teaches sending the decode string to a remote server (e.g., Shopping Server” in Fig. 4) for processing and that the portable electronic device will be able to receive from the remote server (e.g., “backend database”) information about the object that is based on the decode string (e.g., “Result”). Finally, Chen teaches that the portable electronic device displays the received information on a display device (e.g., “phone screen”) associated with the portable electronic device.

c. US Patent Application 2009/0108057 (Mu)

48. US Patent Application 2009/0108057 (Mu et al.) published April 30, 2009. It describes a way to use QR Codes that have been scanned by mobile devices as a method of providing interactive experiences from remote servers that can be experienced on the mobile device. As is more fully described in the Exhibits to follow, Mu teaches that a digital image may be captured using a digital image capturing device (e.g., “optical sensing device or camera”) that is part of a portable electronic device (e.g., “mobile device”). Mu further teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “portion of a book”, “Physical Object 40”) within the digital image is detected using the portable electronic device. Additionally, Mu teaches that the symbology is decoded to obtain a decode string (e.g., “decoded QR code data” such as “resulting URL”) using a visual detection application (e.g., “QR code recognition program”) residing on the portable electronic device. Mu also teaches sending the decode string to a remote server (e.g., “server 120”) for processing and that the portable electronic device will be able to receive from the remote server (e.g., “database”) information about the object that is based on the decode string (e.g., “A selected multimedia object corresponding to the QR code”). Finally, Mu

teaches that the portable electronic device displays the received information on a display device (e.g., “the client’s screen”) associated with the portable electronic device.

d. US Patent Application 2005/0252974 AI (Mizukoshi)

49. US Patent Application 2005/0252974 AI (Mizukoshi) published on November 17, 2005. It describes ways for a person to use a portable telephone to obtain and view product information by taking a picture of a QR code appearing in an advertisement for the product. As more fully described in the exhibits to follow, Mizukoshi teaches that a digital image may be captured using a digital image capturing device (e.g., “camera 21”) that is part of a portable electronic device (e.g., “mobile telephone”). Mizukoshi further teaches that a symbology (e.g., “QR code 4”) associated with an object (e.g., “attached to a building”) within the digital image is detected using the portable electronic device. Additionally, Mizukoshi teaches that the symbology is decoded to obtain a decode string (e.g., “an ID” such as “numbers, symbols, letters, or a combination”) using a visual detection application (e.g., “a barcode analyzer software program”) residing on the portable electronic device. Mizukoshi also teaches sending the decode string to a remote server (e.g., “server 30”) for processing and that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “information of shops in the building 40, such as shop names, lines of business, shop phone numbers, shop locations in the building 40, sale information of the shops or the like”). Finally, Mizukoshi teaches that the portable electronic device displays the received information on a display device (e.g., “display 26”) associated with the portable electronic device.

e. US Patent Application 2007/0205596 (Mizuno et al.)

50. US Patent Application 2007/0205596 (Mizuno et al.) published September 6, 2007. It describes a way to use QR Codes that have been scanned by mobile devices as a method of

providing interactive experiences from remote servers that can be experienced on the mobile device. As is more fully described in the Exhibits to follow, Mizuno teaches that a digital image may be captured using a digital image capturing device (e.g., “cellular phone 5 equipped with a camera”) that is part of a portable electronic device (e.g., “cellular phone”). Mizuno further teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “commercial product sales-use print 17” showing a “desired commercial product” such as “a living room table”) within the digital image is detected using the portable electronic device. Additionally, Mizuno teaches that the symbology is decoded to obtain a decode string (e.g., “information data” such as product code ‘000100A’”) using a visual detection application (e.g., “a commercial product purchase-use application”) residing on the portable electronic device. Mizuno also teaches sending the decode string to a remote server (e.g., “server 2”) for processing and that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “analyzed”). Finally, Mizuno teaches that the portable electronic device displays the received information on a display device (e.g., “display screen”) associated with the portable electronic device.

f. U.S. Patent Application Publication 2007/0215685 (Self et al.)

51. U.S. Patent Application Publication 2007/0215685 (Self et al.) published September 20, 2007. It describes a way to use QR Codes that have been scanned by mobile devices as a method of providing interactive experiences from remote servers that can be experienced on the mobile device. As is more fully described in the Exhibits to follow, Self teaches that a digital image may be captured using a digital image capturing device (e.g., “image capturing device”) that is part of a portable electronic device (e.g., “camera phone”). Self further teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “to be marked on each unit item”)

within the digital image is detected using the portable electronic device. Additionally, Self teaches that the symbology is decoded to obtain a decode string (e.g., “alphanumeric representation” such as “product code 602”) using a visual detection application (e.g., “relevant software for QR code reading”) residing on the portable electronic device. Self also teaches sending the decode string to a remote server (e.g., “server module 100”) for processing and that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “the information is retrieved from the computer system”). Finally, Self teaches that the portable electronic device displays the received information on a display device (e.g., “displayed on the verification screen”) associated with the portable electronic device.

L. Overview of the ‘752 Patent

52. The application for the ‘752 patent was filed on 28 June, 2011 as U.S. Patent Application No. 2012/0199645 A1. The patent is entitled “SYSTEM AND METHOD FOR PRESENTING INFORMATION ABOUT AN OBJECT ON A PORTABLE ELECTRONIC DEVICE.” The named inventor is Leigh M Rothschild and the patent was issued on 23 April, 2013. The ‘752 patent claims priority to patent application No. 12/882,616, filed on 15 September, 2010.

53. My understanding of the ‘752 patent is that it discloses methods in which a user with a mobile electronic device (e.g. smart cell phone) can take a picture of an item that may have a bar code symbol on it. The mobile electronic device will decode the bar code or otherwise identify the item and use the device’s wireless data connection (e.g. cell phone data, WiFi, etc.) to retrieve additional information about the device from a remote server.

M. Anticipation of Claim 1 of the ‘752 Patent

54. For at least the reasons listed below, Claim 1 of the '752 patent would have been anticipated by multiple sources including:

- a. *Japanese Patent 2002-118680 (Ekusa et al.)* published April 19, 2002. While the ideas in the '752 patent would have already been known to someone skilled in the art at the time of its initial submission, as is outlined in the Exhibit B, Ekusa teaches all elements of Claim 1 of in the '752 patent. It is therefore my opinion that Ekusa anticipates Claim 1 of the '752 patent.
- b. *US Patent Application 2009/0108057 A1 (Mu et al.)* filed October 24, 2008. While the ideas of the '752 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit C, Mu teaches all elements of Claim 1 of in the '752 patent. It is therefore my opinion that Mu anticipates Claim 1 of the '752 patent.
- c. The article "*Research and Development of Application of Mobile Barcode to Mobile Sightseeing Guide on Mobile Phone*" by Chen and Weng, published January 2010. While the ideas of the '752 patent would have already been known at the time of its initial submission, as outlined in Exhibit D, Chen and Weng teach all elements of Claim 1 of in the '752 patent. It is therefore my opinion that Chen and Weng anticipate Claim 1 of the '752 patent.
- d. *U.S. Patent Application 2005/0252974 A1 (Mizukoshi)* filed May 16, 2005. While the ideas of the '752 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit E, Mizukoshi teaches all elements of Claim 1 of in the '752 patent. It is therefore my opinion that Mizukoshi anticipates Claim 1 of the '752 patent.

- e. *US Patent Application 2007/0205596 A1 (Mizuno et al)* filed March 28, 2005.

While the ideas of the ‘752 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit F, Mizuno teaches all elements of Claim 1 of in the ‘752 patent. It is therefore my opinion that Mizuno anticipates Claim 1 of the ‘752 patent.

- f. U.S. Patent Application Publication 2007/0215685 (Self et al.) published September 20, 2007. While the ideas of the ‘752 patent would have already been known at the time of its initial submission, as is outlined in Exhibit G, Self teaches all elements of Claim 1 of the ‘752 patent. It is therefore my opinion that Self anticipates Claim 1 of the ‘752 patent.

55. As shown in Exhibits B-G, Ekusa, Mu, Chen, Mizukoshi, Mizuno and Self individually and together would have taught the concepts presented in the ‘752 patent resulting in Claim 1 of the ‘752 patent as being anticipated and/or rendered obvious.

N. Overview of the ‘190 Patent

56. The application for the ‘190 patent was filed on 17 February, 2014 as U.S. Patent Application No. 2014/0158757 A1. The patent is entitled “SYSTEM AND METHOD FOR PRESENTING INFORMATION ABOUT AN OBJECT ON A PORTABLE ELECTRONIC DEVICE.” The named inventor is Leigh M Rothschild and the patent was issued on 20 January, 2015. The ‘190 patent claims priority to patent application No. 12/882,616, filed on 15 September, 2010.

57. My understanding of the ‘190 patent is that it discloses methods in which a user with a mobile electronic device (e.g. smart cell phone) can take a picture of an item that may have a bar code symbol on it. The mobile electronic device will decode the bar code or otherwise

identify the item and use the device's wireless data connection (e.g. cell phone data, WiFi, etc.) to retrieve additional information about the device from a remote server.

O. Anticipation of Claim 1 of the '190 Patent

58. For at least the reasons listed below, Claim 1 of the '190 patent would have been anticipated by multiple sources including:

- a. *Japanese Patent 2002-118680 (Ekusa et al.)* published April 19, 2002. While the ideas in the '190 patent would have already been known to someone skilled in the art at the time of its initial submission, as is outlined in the Exhibit H, Ekusa teaches all elements of Claim 1 in the '190 patent. It is therefore my opinion that Ekusa anticipates Claim 1 of the '190 patent.
- b. *US Patent Application 2009/0108057 A1 (Mu et al.)* filed October 24, 2008. While the ideas of the '190 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit I, Mu teaches all elements of Claim 1 in the '190 patent. It is therefore my opinion that Mu anticipates Claim 1 of the '190 patent.
- c. The article "*Research and Development of Application of Mobile Barcode to Mobile Sightseeing Guide on Mobile Phone*" by Chen and Weng, published January 2010. While the ideas of the '190 patent would have already been known at the time of its initial submission, as outlined in Exhibit J, Chen and Weng teach all elements of Claim 1 in the '190 patent. It is therefore my opinion that Chen and Weng anticipate Claim 1 of the '190 patent.
- d. *U.S. Patent Application 2005/0252974 A1 (Mizukoshi)* filed May 16, 2005. While the ideas of the '190 patent would have already been known at the time

of its initial submission, as is outlined in the Exhibit K, Mizukoshi teaches all elements of Claim 1 in the '190 patent. It is therefore my opinion that Mizukoshi anticipates Claim 1 of the '190 patent.

e. *US Patent Application 2007/0205596 A1 (Mizuno et al)* filed March 28, 2005.

While the ideas of the '190 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit L, Mizuno teaches all elements of Claim 1 in the '190 patent. It is therefore my opinion that Mizuno anticipates Claim 1 of the '190 patent.

f. U.S. Patent Application Publication 2007/0215685 (Self et al.) published September 20, 2007. While the ideas of the '190 patent would have already been known at the time of its initial submission, as is outlined in Exhibit M, Self teaches all elements of Claim 1 of the '190 patent. It is therefore my opinion that Self anticipates Claim 1 of the '190 patent.

59. As shown in Exhibits H-M, Ekusa, Mu, Chen, Mizukoshi, Mizuno and Self individually and together would have taught the concepts presented in the '190 patent resulting in Claim 1 of the '190 patent as being anticipated and/or rendered obvious.

P. Overview of the '369 Patent

60. The application for the '369 patent was filed on 22 April, 2013 as U.S. Patent Application No. 2013/0233920 A1. The patent is entitled "SYSTEM AND METHOD FOR PRESENTING INFORMATION ABOUT AN OBJECT ON A PORTABLE DEVICE." The named inventor is Leigh M Rothschild and the patent was issued on 18 February, 2014. The '369 patent claims priority to patent application No. 12/882,616, filed on 15 September, 2010.

61. My understanding of the '369 patent is that it discloses methods in which a user with a mobile electronic device (e.g. smart cell phone) can take a picture of an item that may have a bar code symbol on it. The mobile electronic device will decode the bar code or otherwise identify the item and use the device's wireless data connection (e.g. cell phone data, WiFi, etc.) to retrieve additional information about the device from a remote server.

Q. Anticipation of Claim 1 of the '369 Patent

62. For at least the reasons listed below, Claim 1 of the '369 patent would have been anticipated by multiple sources including:

- a. *Japanese Patent 2002-118680 (Ekusa et al.)* published April 19, 2002. While the ideas in the '752 patent would have already been known to someone skilled in the art at the time of its initial submission, as is outlined in the Exhibit N, Ekusa teaches all elements of Claim 1 of in the '369 patent. It is therefore my opinion that Ekusa anticipates Claim 1 of the '369 patent.
- a. *US Patent Application 2009/0108057 A1 (Mu et al.)* filed October 24, 2008. While the ideas of the '369 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit O, Mu teaches all elements of Claim 1 of in the '369 patent. It is therefore my opinion that Mu anticipates Claim 1 of the '369 patent.
- b. The article "*Research and Development of Application of Mobile Barcode to Mobile Sightseeing Guide on Mobile Phone*" by Chen and Weng, published January 2010. While the ideas of the '369 patent would have already been known at the time of its initial submission, as outlined in Exhibit P, Chen and

Weng teach all elements of Claim 1 of in the '369 patent. It is therefore my opinion that Chen and Weng anticipate Claim 1 of the '369 patent.

- c. *U.S. Patent Application 2005/0252974 A1 (Mizukoshi)* filed May 16, 2005.

While the ideas of the '369 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit Q, Mizukoshi teaches all elements of Claim 1 of in the '369 patent. It is therefore my opinion that Mizukoshi anticipates Claim 1 of the '369 patent.

- d. *US Patent Application 2007/0205596 A1 (Mizuno et al)* filed March 28, 2005.

While the ideas of the '369 patent would have already been known at the time of its initial submission, as is outlined in the Exhibit R, Mizuno teaches all elements of Claim 1 of in the '369 patent. It is therefore my opinion that Mizuno anticipates Claim 1 of the '369 patent.

- e. *U.S. Patent Application Publication 2007/0215685 (Self et al.)* published September 20, 2007. While the ideas of the '369 patent would have already been known at the time of its initial submission, as is outlined in Exhibit S, Self teaches all elements of Claim 1 of the '369 patent. It is therefore my opinion that Self anticipates Claim 1 of the '369 patent.

63. As shown in Exhibits N-S, Ekusa, Mu, Chen, Mizukoshi, Mizuno and Self individually and together would have taught the concepts presented in the '369 patent resulting in Claim 1 of the '369 patent as being anticipated and/or rendered obvious.

R. Obviousness

64. In my opinion the prior art references above fully anticipate the asserted claims from '752, '369 and '190. However, should Symbology Innovations assert that the references do

not anticipate the asserted claims, any of previously discussed Ekusa, Chen, Mu, Mizukoshi, Mizuno and Self and can be combined to render the asserted claims obvious under 35 U.S.C. § 103.

65. At the time of the invention, one skilled in the art would have been motivated to combine the teachings of Ekusa, Chen, Mu, Mizukoshi, Mizuno and/or Self to arrive at the alleged invention of the asserted claims. As described in the exhibits, each of Ekusa, Chen, Mu, Mizukoshi, Mizuno and Self relate to using a portable electronic device to retrieve information about an object when the object's symbology (e.g., a barcode) is detected. *See* '752 Patent at Abstract. Thus, the prior art itself provides the motivation to combine references. Ekusa, Chen, Mu, Mizukoshi, Mizuno and/or Self generally identify and address the same issues and suggest similar solutions to those problems.

66. In my opinion, one skilled in the art would be motivated to combine any portion of Ekusa, Chen, Mu, Mizukoshi, Mizuno and/or Self with any portion of one or more additional prior art references. If Symbology Innovations alleges that any element of one of the asserted claims is missing from one of the prior art references, I will provide additional testimony regarding specific combinations of Ekusa, Chen, Mu, Mizukoshi, Mizuno and/or Self.

S. Conclusion

67. For at least the preceding reasons, I believe that Claim 1 of the '752, '369 and '190 patents have all been anticipated and/or rendered obvious. As I have shown in this report (including Exhibits), all of the ideas in Claim 1 of each of the patents has been known well in advance of when the patents were initially applied for. One skilled in the art would have easily known about the concepts presented and would have learned no new knowledge. In fact, in some cases, the information that the three patents tried to teach was well known for at least ten years prior by not

only one skilled in the art, but by college students who would have taken my classes or those others teaching AIDC prior 2010.

68. I understand that I may testify about any of the preceding topics at trial. I understand that I may also provide a tutorial on the relevant subject matters including bar code symbologies, bar code scanning and use of bar codes in e-commerce. I understand that I may use demonstrative exhibits or refer to publically available information in presenting my testimony at trial, such as the information in works such as the *Bar Code Book* by Roger C. Palmer, *Lines of Communication* by Craig K. Harmon or *Punched Cards to Bar Codes* by Benjamin Nelson.

69. I am advised that expert discovery in this matter is ongoing and that other experts are opining on the patents-in-suit on other invalidity grounds. Although I was not asked to opine on those other grounds, I agree that there are other obvious combinations that would invalidate U.S. Patents No. 8,424,752, No. 8,651,369 and No. 8,936,190. I am also advised that depositions that may be relevant to my analysis are scheduled to take place after this report is provided. Accordingly, I reserve the right to revise my opinions and respond to any reports submitted by any other expert witness in this action or to any testimony by any fact or expert witness, whether at deposition or at trial.

I declare under penalty of perjury that the foregoing is true and correct. Executed on

Date: 8/15/, 2016

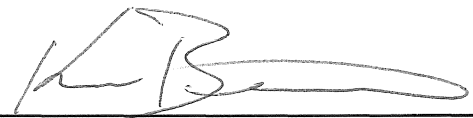

Kevin Berisso, Ph.D.

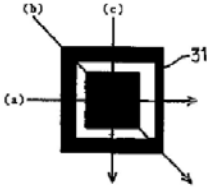
EXHIBIT B – ‘752 PATENT

Japanese patent 2002-118680 teaches use of a mobile electronic device as a means for capturing 2D matrix bar code symbols (e.g. QR Codes) for decoding and as a means to obtain information from a remote computer server (e.g. web site) for display on the mobile electronic device. It is my opinion that Ekusa anticipates Claim 1 of the ‘752 patent.

'752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
A method comprising:	<p>Ekusa teaches a method through at least the following examples.</p> <p>FIG. 7</p> <pre>graph TD START([START]) --> S101[Activation of OFF timer S101] S101 --> S102{S102 Has the time run out?} S102 -- YES --> S108[END processing S108] S102 -- NO --> S103{S103 END operation performed?} S103 -- YES --> S108 S103 -- NO --> S104{S104 Connection operation performed?} S104 -- YES --> S110[Display the method of connecting to the information center on the screen S110] S104 -- NO --> S105{S105 Readout operation performed?} S105 -- YES --> S109[Read out the deciphered data of the stored QR code and display it on the screen S109] S105 -- NO --> S106{S106 Scanning operation performed?} S106 -- YES --> S107[Code scan processing S107] S106 -- NO --> S102 S107 --> S111[Connect to the information center through the use of the connection information of the advertisement displayed on the screen S111] S111 --> S112[Receive information, which prompts the transmission of the advertisement identification code and medium identification code, from the information center. S112] S112 --> S113[Transmit the advertisement identification code and medium identification code to the information center. S113] S113 --> S114[Receive detailed information applicable to the advertisement identification code from the information center. S114] S114 --> S115[Display the detailed information thus received. S115] S115 --> S102</pre>

'752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>FIG. 8</p> <p>Code Scan Processing</p> <pre>graph TD START([START]) --> S201[S201: Input image data] S201 --> S202[S202: Create binary image data] S202 --> S203[S203: Search for code characteristic pattern] S203 --> S204{S204: Is there a characteristic pattern?} S204 -- NO --> S213[S213: Indication that it is not an advertisement code] S204 -- YES --> S205[S205: Check the peripheral position of the code and determine the code region] S205 --> S206[S206: Determine light or dark of each data cell] S206 --> S207[S207: Convert all data cell into data bit string] S207 --> S208[S208: Check errors in the data bit string and correct errors, if any] S208 --> S209[S209: Convert the data bit string into a character code] S209 --> S210{S210: Is there an identification flag?} S210 -- NO --> S213 S210 -- YES --> 211[211: Classify the data: * n characters before the identification flag -> information on the ad content * n characters before the identification flag -> ad information code * n characters before the identification flag -> medium information code * n characters before the identification flag -> connection information] 211 --> S212[S212: Display the advertisement content information] S212 --> END([END]) S213 --> END</pre> <p>As can be seen in the preceding examples, Ekusa teaches a method. And to the extent that the words “A method comprising...” are not explicitly used, one skilled in the art would immediately understand that a method of usage is being taught.</p>
capturing a digital image using a digital image capturing device that	Through at least the following examples, Ekusa teaches that a digital image may be captured using a digital image capturing device (e.g., “imaging part 18”) that is part of a portable electronic device (e.g.,

‘752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>[0025]: <i>“Meanwhile, when the user wants to use the portable telephone 7 to scan a QR code 4, he or she operates the shutter key in the key operation part 14, doing so in the state where the QR-code scan mode is selected and set. In this case, once the imaging part 18 captures the QR code 4”</i></p> <p>[0049]: <i>“...Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4,...”</i></p> <p>To one skilled in the art, the scanning of a symbol in the context of Ekusa is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Ekusa teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Ekusa doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with an object within the digital image using a portable electronic device;	<p>Through at least the following examples, Ekusa teaches that a symbology (e.g., “QR code 4”) associated with an object (e.g., “advertising media 6”) within the digital image is detected using the portable electronic device.</p> <p><i>Claim 1:</i> <i>“A decoding means for deciphering the two dimensional code captured by said imaging means and converting it into data”</i></p> <p>[0006]: <i>“According to the invention of Claim 1, once an imaging means has captured a two-dimensional code, a decoding means decipheres the two-dimensional code captured by the imaging means...”</i></p> <p>[0013]: <i>“The advertisement client 1 requests ... that the advertiser 5 print the QR code ... onto advertising media 6 such as posters, wall banners or community magazines, etc.”</i></p> <p>[0014]: <i>“A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function for scanning and thus reading the QR code 4...”</i></p> <p>[0024]: <i>“...When it captures a QR code 4, which contains coded information, it can decode the QR code 4 and thereby convert the</i></p>

‘752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>code into textual information.”</i></p> <p>[0025]: “...In this case, once the imaging part 18 captures the QR code 4, the image data of the captured QR code 4 is provided to the CPU 23. The CPU 23, when provided with a QR code 4, decodes the QR code 4...”</p> <p>[0027]: “Figure 5 shows a positioning symbol. In said Figure 5, the positioning symbol 31 is configured so that contrast (dark/light) component ratio of the pattern passing through the center of the positioning symbol 31 (as represented by the patterns (a), (b) and (c) in Figure 4) would be dark:light:dark:light:dark = 1:1:3:1:1. Thus, the CPU 23 obtains the ratio of the length of continuous light (1) and the length of continuous dark (0) in a QR image, thereby detecting a pattern applicable to the positioning symbol 31 of the QR code 4 based on said ratio of the lengths. It also executes code processing and can thereby determine whether the QR code 4 is present in the image based on whether three positioning symbols are present at appropriate positions.”</p> <p>FIG. 5</p>  <p>[0034]: “Now, in order for the user to operate the imaging part 18 of the portable telephone 7 so as to scan a QR code 4, ... Here, the CPU 23 of the portable telephone 7 executes code scan processing when the scanning operation is performed (S107).”</p> <p>[0035]: “Figure 8 shows the code scan processing by the CPU 23. In said Figure 8, the CPU 23 inputs image data first (S201) and then creates binary image data (S202). Subsequently, it searches for the presence of a positioning symbol's characteristic pattern in the binary image data (S203).”</p> <p>[0049]: “... Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4...”</p> <p>To one skilled in the art, “reading” of a bar code symbol is synonymous with both detecting and decoding of the symbol of</p>

'752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	interest. Eksua teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the portable electronic device;	<p>Through at least the following examples, Ekusa teaches that the symbology is decoded to obtain a decode string (e.g., "textual information" such as "advertisement identification information 32b") using a visual detection application (e.g., "a program stored in ROM 24") residing on the portable electronic device .</p> <p><i>Claim 1:</i> <i>"A decoding means for deciphering the two dimensional code captured by said imaging means and converting it into data"</i></p> <p>[0006]: <i>"According to the invention of Claim 1, once an imaging means has captured a two-dimensional code, a decoding means deciphers the two-dimensional code captured by the imaging means and transforms it into data. ..."</i></p> <p>[0014]: <i>"A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function for scanning and thus reading the QR code"</i></p> <p>[0020]: <i>"Additionally, the portable telephone 7 is primarily comprised of a CPU (which corresponds to the decoding means..."</i></p> <p>[0024]: <i>"...When it captures a QR code 4, which contains coded information, it can decode the QR code 4 and thereby convert the code into textual information."</i></p> <p>[0025]: <i>"...In this case, once the imaging part 18 captures the QR code 4, the image data of the captured QR code 4 is provided to the CPU 23. The CPU 23, when provided with a QR code 4, decodes the QR code 4..."</i></p> <p>[0028]: <i>"Then, it executes decoding based on the type of each cell and thus obtains information represented by the two-dimensional information code."</i></p> <p>[0029] <i>"Figure 6 shows information recorded on the QR code 4. In said Figure 6, the advertisement-content identification information</i></p>

'752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002												
	<p>32, which is used to identify advertisement information (which corresponds to connection information), is stored in the QR code 4. The advertisement-content identification information 32 concerned consists of advertisement content information 32a, advertisement identification information 32b and connection information 32c.”</p> <p>FIG. 6</p> <p>[0036]: “Meanwhile, when binary image data has a characteristic pattern (S204: YES), the CPU 23 checks the peripheral position of the code determined based on the positioning symbols, it determines the code region (S205). Subsequently, it obtains the positions of the data cells situated in the code region based on the positioning symbols and determines the light or dark of each data cell (S206). Subsequently, it converts each data cell into a data bit string (S207) while checking for errors in the data bit string and correcting errors, if any (S208), and then converts the data bit string into a character code (S209).”</p> <p>Fig. 9:</p> <table><tr><th>Ad content</th><th>Connection info</th><th>Ad identification code</th><th>Medium identification code</th></tr><tr><td>Digital navigation system</td><td>http://www.DENSO.co.jp</td><td>aaaaaaaaa</td><td>bbbbbbbbb</td></tr><tr><td>OXOX Moving Center</td><td>012-123-4567</td><td>ggggggggggg</td><td>hhhhhhhhh</td></tr></table> <p>[0049]: “According to such an embodiment, a QR code 4, which indicates advertisement identification information (including connection information), is printed on the advertising media 6. Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes...”</p> <p>To one skilled in the art, “reading” of a bar code symbol is synonymous with both detecting and decoding of the symbol of interest. Furthermore, to one skilled in the art, the conversion of</p>	Ad content	Connection info	Ad identification code	Medium identification code	Digital navigation system	http://www.DENSO.co.jp	aaaaaaaaa	bbbbbbbbb	OXOX Moving Center	012-123-4567	ggggggggggg	hhhhhhhhh
Ad content	Connection info	Ad identification code	Medium identification code										
Digital navigation system	http://www.DENSO.co.jp	aaaaaaaaa	bbbbbbbbb										
OXOX Moving Center	012-123-4567	ggggggggggg	hhhhhhhhh										

'752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	dark and light data cells within a QR Code is the technical means by which a 2D matrix symbol is decoded. Eksua teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.
sending the decode string to a remote server for processing;	<p>Through at least the following examples, Ekusa teaches sending the decode string to a remote server (e.g., "WWW server 3") for processing.</p> <p><i>Claim 4:</i> <i>"The portable communication terminal device according to any one of the claims 1 through 4, characterized by comprising an automatic transmission means for automatically transmitting given data (other than the connection destination data) to the connection destination's device concerned, doing so when said connection means connects to the connection destination's device according to the connection destination data."</i></p> <p>[0015]: <i>"The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time."</i></p> <p>[0040]: <i>"In this case, the assumption is that the connection method thus displayed instructs connection to the website's URL, which is set up in the WWW server 3 of the information center 2. Connection to the URL is automatically established when the connection method is set in the automatic connection mode. Stated another way, the WWW browser is activated automatically, whereby it accesses the website on the WWW server 3 of the information center 2 via a mobile phone network and the Internet..."</i></p> <p>[0042] <i>"When accessed by the portable telephone 7, the WWW server 3 of the information center 2 transmits information, which prompts the transmission of an advertisement identification code and a medium identification code. Accordingly, when the CPU 23 of the portable telephone 7 receives such information (S112), it transmits the advertisement identification code and the medium identification code, which are stored therein, to the WWW server 3</i></p>

‘752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>(S113).”</p> <p>[0043] “Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code.”</p> <p>[0049]: “...Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4, the advertisement identification information indicated by the QR code will be stored in the portable telephone 7. Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</p> <p>To one skilled in the art, the term “decode string” is synonymous with the term “decoded data” or “symbolology data.” Additionally, the term “sending the decode string” is synonymous with the terms “transmitting”, “transmitting the data”, “transmitting the symbolology data” and “transmitting the decoded data.” Finally, to one skilled in the art, discussions pertaining to transmission of information (data) implicitly implies that there HAS to be a remote (physically disparate) device (e.g. computer, server, website, etc.). Ekusa teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Ekusa doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.</p>
receiving information about the object from the remote server wherein the information is based on the decode string of the object;	<p>Through at least the following examples, Ekusa teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “detailed information applicable to the advertisement identification code”).</p> <p><i>Abstract:</i></p> <p>“When the user sees the advertisement and wants to obtain information on the advertisement, he or she captures the QR code 4 with a portable telephone 7 provided with a photographic function.</p>

‘752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>The portable telephone 7 accesses the information center 2 according to the connection information indicated by the QR code 4, thus allowing the user to easily access the information center 2...</i></p> <p>Fig. 1 (above); Fig. 7 (above); Fig. 8 (above) and associated text.</p> <p>[0015]: <i>“The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time.”</i></p> <p>[0031]: <i>“As software used to connect to the Internet, for example, a WWW browser is stored in the ROM 24 of the portable telephone 7. By activating said WWW browser, it becomes possible to access the website provided on the WWW server, which is connected to the Internet, from the portable telephone 7 in order to download data containing necessary data, or to access a database provided on the WWW server in order to write data.”</i></p> <p>[0038]: <i>“In this case, the connection information is either a website address on the WWW server 3 of the information center 2 In the case of access through connection to the website, one can download”</i></p> <p>[0040]: <i>“In this case, the assumption is that the connection method thus displayed instructs connection to the website's URL, which is set up in the WWW server 3 of the information center 2. Connection to the URL is automatically established when the connection method is set in the automatic connection mode. Stated another way, the WWW browser is activated automatically, whereby it accesses the website on the WWW server 3 of the information center 2 via a mobile phone network and the Internet. In response to said access, information (contents data) on the product or service such as images, text, audio, etc., can be downloaded into the portable telephone 7 from the website on the WWW server 3 of the information center 2 ...”</i></p> <p>[0043] <i>“Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code. Accordingly, once the CPU 23 of the portable</i></p>

‘752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>telephone 7 receives the detailed information applicable to the advertisement identification code (S114), it displays the received detailed information on the display part 16 (S115). Thus, the user can view detailed information regarding the advertisement or service.”</i></p> <p><i>[0049]: “...Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</i></p> <p>Ekusa teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Ekusa teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Ekusa doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the portable electronic device.	<p>Through at least the following examples, Ekusa teaches that the portable electronic device displays the received information on a display device (e.g., “display part 16”) associated with the portable electronic device.</p> <p>Fig. 1 (above); Fig. 7 (above); Fig. 8 (above) and associated text.</p> <p><i>[0012]: “Said advertisement-content identification information contains information used to identify the advertisement, data used to display the content of the advertisement, and connection information used for connection to the information center.”</i></p> <p><i>[0014] “Because information on the product or service is stored in said QR code 4, the user may cause the information on the product or service (which is stored in the portable telephone 7) to be displayed on the portable telephone 7 itself, a PDA (Personal Digital Assistant) 8 or a car navigation system 9 that is connected to the portable telephone 7, thereby making it possible to obtain the information on the product or service at any time.”</i></p>

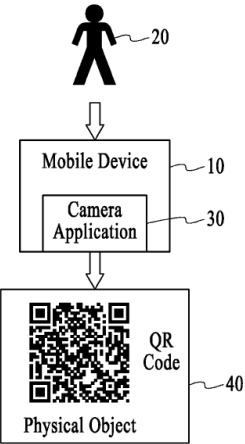
‘752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>[0015]: <i>“The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time.”</i></p> <p>[0018]: <i>“Figure 3 shows the portable telephone 7. In said Figure 3, the front surface of the housing 13 of the portable telephone 7 comprises a key operation part 14 consisting of multiple operation keys, a microphone 15, a display part 16 comprising an LCD”</i></p> <p>[0038]: <i>“In this case, the connection information is either a website address on the WWW server 3 of the information center 2 In the case of access through connection to the website, one can download the content and thereby view detailed information on the product or service.”</i></p> <p>[0040]: <i>“In response to said access, information (contents data) on the product or service such as images, text, audio, etc., can be downloaded into the portable telephone 7 from the website on the WWW server 3 of the information center 2 and then displayed on the display part 16.”</i></p> <p>[0043] <i>“Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code. Accordingly, once the CPU 23 of the portable telephone 7 receives the detailed information applicable to the advertisement identification code (S114), it displays the received detailed information on the display part 16 (S115). Thus, the user can view detailed information regarding the advertisement or service.”</i></p> <p>[0049]: <i>“... Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</i></p>

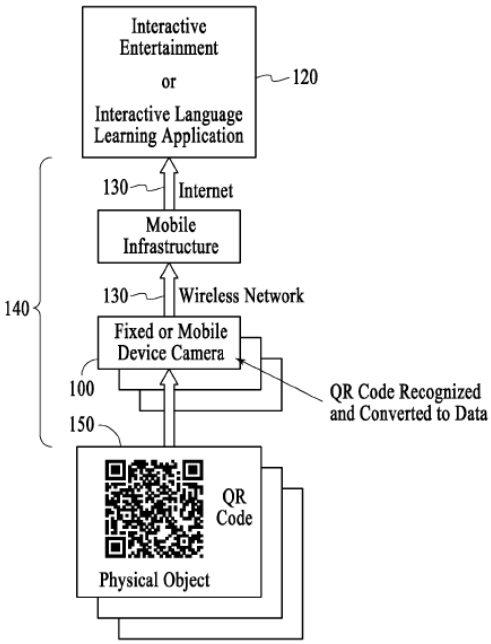
'752 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	Ekusa teaches that the portable electronic device is able to display the received information. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.

EXHIBIT C – ‘752 PATENT

US Patent Application 2009/0108057 teaches the use of QR Codes that scanned by mobile devices as a means of providing interactive experiences that have been retrieved from remote servers on the mobile device. It is my opinion that Mu anticipates Claim 1 of the ‘752 patent.

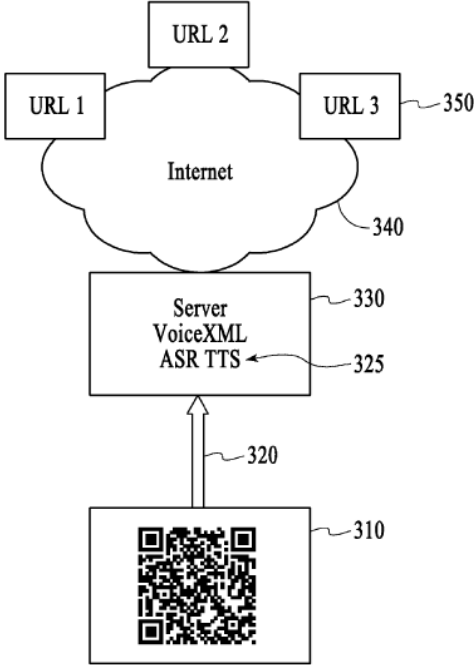
‘752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
A method comprising:	<p>Mu teaches a method through at least the following examples</p> <p><i>Abstract: “Systems and methods are described that include using quick response (QR) codes with mobile devices for providing interactive applications and services to a user via the mobile devices...”</i></p> <p><i>Claim 1: “1. A method comprising:...”</i></p> <p><i>[0014]: “Methods and systems are described below for using QR codes on or in physical objects to launch interactive learning sessions when scanned with a client device having an optical sensing device or camera.”</i></p> <p>As can be seen in the preceding examples, Mu teaches a method.</p>
capturing a digital image using a digital image capturing device that is part of a portable electronic device;	<p>Through at least the following examples, Mu teaches that a digital image may be captured using a digital image capturing device (e.g., “optical sensing device or camera”) that is part of a portable electronic device.</p> <p><i>Claim 10: “scanning a quick response (QR) code using a component of a mobile device...”</i></p> <p><i>Claim 11: “...a client device including a scanner...”</i></p> <p>Fig 1.</p>

‘752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	 <p>The diagram shows a user (20) interacting with a mobile device (10). The mobile device contains a camera application (30). The camera application is used to scan a QR code (40) located on a physical object. Arrows indicate the flow of interaction: from the user to the mobile device, from the camera application to the QR code, and from the QR code back to the mobile device.</p> <p>[0014]: “Methods and systems are described below for using QR codes on or in physical objects to launch interactive learning sessions when scanned with a client device having an optical sensing device or camera.”</p> <p>[0021]: “FIG. 1 shows a client device configured to scan a QR code, under an embodiment. The client device 10 is operated by a user 20 and includes and processes all applications corresponding to QR code recognition activities. These applications include a camera application 30 for scanning the QR Code from a physical object 40, but the applications are not so limited.”</p> <p>[0040]: “The systems and methods described herein include a method for using QR codes with mobile devices for education and training services. The method of an embodiment uses an optical device or component hosted on or in a client device (e.g., mobile device) to scan the QR code of a card, portion of a book, portion of a magazine, portion of a newspaper, physical object, and/or display screen or device...”</p> <p>To one skilled in the art, the scanning of a symbol in the context of Mu is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Mu teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Mu doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with an	Through at least the following examples, Mu teaches that symbology (e.g., “QR code”) associated with an object (e.g.,

'752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
<p>object within the digital image using a portable electronic device;</p>	<p>“Physical Object 40” as shown in Figs. 1 and 2, such as “games, toys or just about any object about which a user might want information”) within the digital image is detected using the portable electronic device.</p> <p>Fig 2.</p>  <p>Claim 6: <i>“The method of Claim 1, comprising generating the data of the QR code by decoding the QR code at the mobile device”</i></p> <p>Claim 12: <i>“The system of Claim 11, wherein the mobile device decodes the QR code.”</i></p> <p>[0018]: <i>“QR codes storing addresses and URLs may appear in books, on object packaging, games, toys or just about any object about which a user might want information.”</i></p> <p>[0019]: <i>“Typically, the client will be configured to decode the QR code locally”</i></p> <p>[0022] <i>“In an embodiment, QR code recognition processing is performed via a client device...”</i></p> <p>[0023] <i>“...These downloaded applications are subsequently run on the client 100 during the execution of the QR code recognition exercises.”</i></p>

'752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for processing...The client decoder 220 sends the QR code data..."</i></p> <p>To one skilled in the art, "reading" of a bar code symbol in the context of Mu is synonymous with both detecting and decoding of the symbol of interest. Furthermore, it is understood by one skilled in the art that if a bar code symbol is decoded it MUST first be detected. Mu teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.</p>
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the portable electronic device;	<p>Through at least the following examples, Mu teaches that the symbology is decoded to obtain a decode string (e.g., "decoded QR code data") using a visual detection application (e.g., "reader software" or "QR code recognition program" such as "a camera application 30 for scanning the QR Code from a physical object 40") residing on the portable electronic device.</p> <p>Claim 1: <i>"...receiving data of a quick response (QR) code at a mobile device, the data of the QR code received from a scan of the QR code;"</i></p> <p>Claim 6: <i>"The method of Claim 1, comprising generating the data of the QR code by decoding the QR code at the mobile device"</i></p> <p>Claim 10: <i>"...decoding the QR code"</i></p> <p>Claim 12: <i>"The system of Claim 11, wherein the mobile device decodes the QR code."</i></p> <p>Fig. 1 (above); Fig. 2 (above); Fig. 3 (above) and associated text.</p> <p>[0018]: <i>"Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.)..."</i></p> <p>[0019]: <i>"Typically, the client will be configured to decode the QR code locally rather than transferring the QR code to the server for interpretation..."</i></p> <p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for</i></p>

‘752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>processing...The client decoder 220 sends the QR code data...</i>”</p> <p>[0035]: “<i>In an alternative embodiment, the QR code is decoded by or within the client and the resulting URL is used by the client to make a connection.</i>”</p> <p>To one skilled in the art, “reading” of a bar code symbol in the context of Mu is synonymous with both detecting and decoding of the symbol of interest. Furthermore, to one skilled in the art, the conversion of dark and light data cells within a QR Code is the technical means by which a 2D matrix symbol is decoded. Mu teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Mu doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.</p>
sending the decode string to a remote server for processing;	<p>Through at least the following examples, Mu teaches sending the decode string to a remote server (e.g., “server 120”) for processing.</p> <p>Fig. 2 (above); Fig. 3 (above); Fig 5. (above) and associated text.</p> <p>[0018]: “<i>Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.). The client can also be configured to receive data from a remote device in response to the transmitted QR code data. For example, the client can transmit the QR code data and speech data to a remote server or specified uniform resource locator (URL)...</i>”</p> <p>[0019]: “<i>Typically, the client will be configured to decode the QR code locally rather than transferring the QR code to the server for interpretation, but the client is not so limited. A user having a client device with a scanner, for example a camera telephone phone equipped with a reader and reader software can scan and decode the image of the QR code causing the phone's browser to launch and redirect to the programmed URL.</i>”</p> <p>[0028]: “<i>FIG. 3 shows transmission of QR code data to a server for processing in interactive entertainment or interactive language learning applications, under an embodiment...</i>”</p> <p>[0026]: “<i>In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via</i></p>

<p>‘752 Patent</p>	<p>U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009</p>
	<p><i>their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function...</i></p> <p>Fig 4.</p>  <p>[0033]: “FIG. 4 shows connection to URLs via a decoded QR code in interactive entertainment or interactive language learning applications, under an embodiment. A QR code received by a client device is decoded 320 and transferred to a server where it is processed or analyzed...”</p> <p>[0040]: “...The method of an embodiment transfers or transmits the decoded QR code data from the mobile device to a URL as determined from the QR code data...”</p> <p>[0036]: “FIG. 5 is a flow diagram for a multimedia object playback thread, under an embodiment. Operation begins when the decoded QR code information is provided to or received at the server...”</p> <p>To one skilled in the art, the term “decode string” in the context of Mu is synonymous with the term “decoded data” or “symbology data.” Additionally, the term “sending the decode string” is synonymous with the terms “transmitting”, “transmitting the data”, “transmitting the symbology data” and “transmitting the decoded data.” Finally, to one skilled in the art, discussions pertaining to transmission of information (data) implicitly implies that there HAS</p>

'752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	to be a remote (physically disparate) device (e.g. computer, server, website, etc.). Mu teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.
receiving information about the object from the remote server wherein the information is based on the decode string of the object;	<p>Through at least the following examples, Mu teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., "A selected multimedia object corresponding to the QR code").</p> <p>Abstract: "...A selected multimedia object corresponding to the QR code is retrieved from the URL or a database. The selected multimedia object is transferred to the mobile device for playback."</p> <p>Claim 1: "...selecting a multimedia object corresponding to the data of the QR code and retrieving the multimedia object via one of the URL and a database;"</p> <p>Claim 7: "...transmitting the multimedia object to the mobile device using at least one transmission packet, wherein the at least one transmission packet of the multimedia object is transmitted to the mobile device via a mobile internet connection."</p> <p>Claim 11: "...a server coupled to the client device via a network, the server receiving the QR code from the client device, the server identifying and retrieving a multimedia object corresponding to the QR code, and the server transmitting the multimedia object to the mobile device."</p> <p>Claim 15: "The system of Claim 11, wherein the mobile device receives the multimedia object and presents the multimedia object to a user via at least one of a display and an audio device."</p> <p>[0018]: "Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.). The client can also be configured to receive data from a remote device in response to the transmitted QR code data. For example, the client can transmit the QR code data and speech data to a remote server or specified uniform resource locator (URL), which then returns back a multimedia object or menu of additional choices. QR codes storing addresses and URLs may</p>

'752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>appear in books, on object packaging, games, toys or just about any object about which a user might want information."</i></p> <p>[0026]: <i>"In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function... The QR code function of an embodiment also includes use of the URL from the decoded QR code to return a multimedia object or web page to the client. The proper XML file is returned to the client from the server, via the Internet or wireless network, and the client's browser displays the text, graphics and multimedia data of the file on the client's screen. The user may then perform various entertainment or language learning exercises at the direction of the displayed web page."</i></p> <p>[0029]: <i>"In response to transmission of the QR code by the client, the client receives an XML file 250 comprising a web page from the server for use in an entertainment or language learning activity, and the client device 210 displays the text, graphics and multimedia data of the file to the user 200. When the user thereafter selects an exercise via the displayed web page"</i></p> <p>Fig. 3 (above), Fig. 5 (above), and associated text.</p> <p>[0040]: <i>"The systems and methods described herein include a method for using QR codes with mobile devices for education and training services. The method of an embodiment uses an optical device or component hosted on or in a client device (e.g., mobile device) to scan the QR code of a card, portion of a book, portion of a magazine, portion of a newspaper, physical object, and/or display screen or device. The method of an embodiment decodes the QR code in the mobile device. The method of an embodiment transfers or transmits the decoded QR code data from the mobile device to a URL as determined from the QR code data. The method of an embodiment catalogs the QR code data. The method of an embodiment associates the decoded QR code to a multimedia object in a database. The method of an embodiment retrieves the corresponding multimedia object from the database. The method of an embodiment transfers the corresponding multimedia object retrieved or read from the database to the mobile device for playback. The method of an embodiment can also transfers the corresponding multimedia object retrieved or read from the database to another device for playback or input into another software program or service."</i></p>

'752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p>[0036]: <i>"FIG. 5 is a flow diagram for a multimedia object playback thread, under an embodiment. Operation begins when the decoded QR code information is provided to or received at the server. The server determines if the received information is in the master index. If the received QR code information is not in the master index, the item is cataloged and quarantined for subsequent action. If the QR code information is identified in the master index, the audiovisual object is retrieved by the server, which then determines if a format conversion is necessary, performs such a conversion if needed, and then delivers the audiovisual object to the device for presentation."</i></p> <p>Mu teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Mu teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the portable electronic device.	<p>Through at least the following examples, Mu teaches that the portable electronic device displays the received information on a display device (e.g., "the client's screen") associated with the portable electronic device.</p> <p>Abstract: <i>"...The selected multimedia object is transferred to the mobile device for playback."</i></p> <p>Claim 2: <i>"The method of Claim 1, comprising receiving the multimedia object at the mobile device and presenting the multimedia object to a user via at least one of a display and an audio device of the mobile device."</i></p> <p>Claim 10: <i>"...transmitting the multimedia object to at least one of the mobile device for playback and a remote device for at least one of playback, input into an application, and input into a service."</i></p> <p>[0026]: <i>"In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function. The QR code function of an embodiment includes a QR code processing exercise from the server supporting QR code recognition. The QR code function of an</i></p>

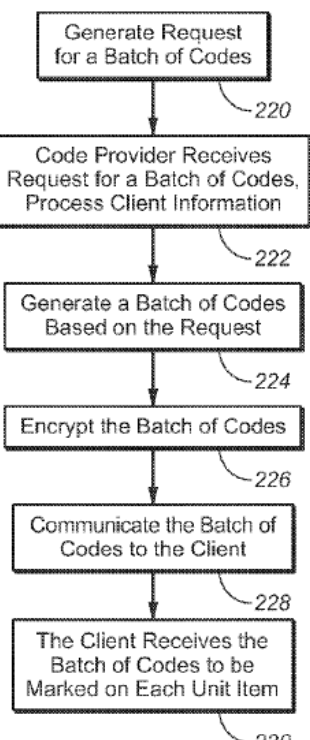
'752 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>embodiment also includes use of the URL from the decoded QR code to return a multimedia object or web page to the client. The proper XML file is returned to the client from the server, via the Internet or wireless network, and the client's browser displays the text, graphics and multimedia data of the file on the client's screen. The user may then perform various entertainment or language learning exercises at the direction of the displayed web page."</i></p> <p>[0029]: <i>"In response to transmission of the QR code by the client, the client receives an XML file 250 comprising a web page from the server for use in an entertainment or language learning activity, and the client device 210 displays the text, graphics and multimedia data of the file to the user 200. When the user thereafter selects an exercise via the displayed web page, a script associated with the selected exercise activates a browser component."</i></p> <p>[0030]: <i>"In an embodiment, a text response is returned to the client from the server, which is displayed on a portion of the screen already displaying the current web page for the activity accessed by the user. In an alternative embodiment, an entirely new XML page 250 is returned from the server 240, which is displayed as a new web page to the user, via the client screen on the mobile device 210."</i></p> <p>[0048]: <i>"The method of an embodiment comprises receiving the multimedia object at the mobile device and presenting the multimedia object to a user via at least one of a display and an audio device of the mobile device."</i></p> <p>Mu teaches that the portable electronic device is able to display the received information. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.</p>


EXHIBIT G – ‘752 PATENT

US Patent Application 2007/0215685 A1 teaches use of a mobile electronic device as a means for capturing 2D matrix bar code symbols (e.g. QR Codes) for decoding and as a means to obtain information from a remote computer server (e.g. web site) for display on the mobile electronic device. It is my opinion that Self (et al.) anticipates Claim 1 of the ‘752 patent.

‘752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
A method comprising:	<p>Self teaches a method through at least the following examples.</p> <p>Claim 1: “<i>A method comprising:</i>”</p> <p>[0008]: “<i>Methods and systems for product identification using a URL...</i>”</p> <p>[0017-0018]: “<i>FIG. 3B is a flow chart describing an overview of an example process of product information request with an associated URL, according to one embodiment. FIG. 3C is a flow chart describing an overview of an example process of providing product information in response to receiving a request for product information with a URL, according to one embodiment.</i>”</p> <p>As can be seen in the preceding examples, Self teaches a method. And to the extent that the words “A method comprising...” are not explicitly used, one skilled in the art would immediately understand that a method of usage is being taught.</p>
capturing a digital image using a digital image capturing device that is part of a portable electronic device;	<p>Through at least the following examples, Self teaches that a digital image may be captured using a digital image capturing device (e.g., “an image capturing device such as a digital camera”) that is part of a portable electronic device (e.g., “camera phone”).</p> <p>Claim 12: “<i>The method of claim 5 wherein the bar code is scannable by an image capturing device.</i>”</p> <p>Claim 13: “<i>The method of claim 6 wherein the image capturing device is an electronic device that is at least one of a mobile phone, a digital camera, a laptop computer, a PDA, a desktop computer, a scanner, or a camera.</i>”</p>

<p>'752 Patent</p>	<p>U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007</p>
	<div data-bbox="542 275 1338 785"> <p>300B</p> <pre> graph TD 312[Capture an Identifier of the Associated URL for the Item or Package] --> 314[Communicate the Identifier of the Associated URL or Enter the URL in a Web Page to Retrieve Product Information About the Item or Package] 314 --> 316[Provide Information About the Request (e.g. Identity of the Requestor, Location of the Request, Time of the Request, etc.)] 316 --> 318[Receive Product Information About the Item or Package Associated with the URL] </pre> </div> <p style="text-align: center;">FIG. 3B</p> <p>[0003]: “In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</p> <p>[0035-0036]: “Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</p> <p>[0044]: “the product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</p> <p>[0056]: “The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</p> <p>[0069]: “[T]he identifier is automatically captured with an image capturing device such as a digital camera, a camera, digital</p>

‘752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>cameras built into portable devices (e.g., cell phones, PDAs, laptop computers etc), or a scanner.”</i></p> <p>To one skilled in the art, the scanning of a symbol with a camera in the context of Self is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Self teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with an object within the digital image using a portable electronic device;	<p>Through at least the following examples, Self teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “to be marked on each unit item”) within the digital image is detected using the portable electronic device.</p> <p>Claim 12: “<i>The method of claim 5 wherein the bar code is scannable by an image capturing device.</i>”</p>  <pre> graph TD 220[Generate Request for a Batch of Codes] --> 222[Code Provider Receives Request for a Batch of Codes, Process Client Information] 222 --> 224[Generate a Batch of Codes Based on the Request] 224 --> 226[Encrypt the Batch of Codes] 226 --> 228[Communicate the Batch of Codes to the Client] 228 --> 230[The Client Receives the Batch of Codes to be Marked on Each Unit Item] </pre> <p>FIG. 2A</p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<div data-bbox="568 294 795 472">  </div> <p data-bbox="641 493 787 535">FIG. 6B</p> <p data-bbox="532 598 1412 777">[0003]: <i>“In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</i></p> <p data-bbox="532 819 1412 1102">[0035-0036]: <i>“Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</i></p> <p data-bbox="532 1144 1364 1249">[0044]: <i>“[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</i></p> <p data-bbox="532 1291 1412 1501">[0056]: <i>“The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</i></p> <p data-bbox="532 1543 1120 1585">[0060]: <i>“...to be marked on each unit item...”</i></p> <p data-bbox="532 1627 1412 1795">[0067]: <i>“In one embodiment, the identifier is marked as a bar code that is scannable by image capturing devices. Additionally, the identifier may be a 2D bar code. In process 310, the item or package is marked with an identifier of the associated URL of the item or package.”</i></p> <p data-bbox="532 1837 1299 1869">[0089]: <i>“FIG. 6B illustrates an example of an alphanumeric</i></p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>representation of a product code/URL 604 encoded as a graphic symbol, according to one embodiment.”</i></p> <p>[0090]: <i>“Of course, it will be appreciated by those skilled in the art that in various alternative embodiments, product codes may be encoded with other graphic symbologies, for example, such as barcode fonts consistent with the PDF417 or QR Product code standards. In one embodiment, both versions of the product code 602 and 604 may be included on the product, label, or product packaging.”</i></p> <p>To one skilled in the art, the “reading” or “scanning” of a bar code symbol in the context of Self is synonymous with both detecting and decoding of the symbol of interest. Self teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.</p>
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the portable electronic device;	<p>Through at least the following examples, Self teaches that the symbology is decoded to obtain a decode string (e.g., an “alphanumeric representation” such as “product code 602” which “may be a string of sixteen alphanumeric characters”) using a visual detection application (e.g., “relevant software for QR code reading”) residing on the portable electronic device.</p> <p>Claim 12: <i>“The method of claim 5 wherein the bar code is scannable by an image capturing device.”</i></p> <p>Fig. 6B (above)</p> <p>[0003]: <i>“In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</i></p> <p>[0035-0036]: <i>“Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve</i></p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>the information in addition to providing authentication of the product.”</i></p> <p>[0044]: “[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</p> <p>[0056]: “The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</p> <p>[0088]: “FIG. 6A illustrates an example of an alphanumeric representation of a product code, according to one embodiment. In one embodiment, the product code may be a string of sixteen alphanumeric characters consisting of numbers and letters, such as the product code 602.”</p> <p>[0089]: “FIG. 6B illustrates an example of an alphanumeric representation of a product code/URL 604 encoded as a graphic symbol, according to one embodiment.”</p> <p>To one skilled in the art, the “reading” or “scanning” of a bar code symbol in the context of Self is synonymous with both detecting and decoding of the symbol of interest. Self teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.</p>
sending the decode string to a remote server for processing;	Through at least the following examples, Self teaches sending the decode string to a remote server (e.g., “server module 100”) for processing.

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<div data-bbox="557 277 1052 676"> <pre> graph TD 108[Person 108] --- 106[Consumer Device 106] 106 --- 110((Network 110)) 104[Distributor 104] --- 110 100[Server Module 100] --- 110 102[Client 102] --- 110 </pre> </div> <p data-bbox="776 703 860 735">FIG. 1</p> <p data-bbox="532 783 737 814">Fig. 3B (above)</p> <div data-bbox="548 865 1107 1339"> <pre> graph TD 322[Receive a Request for a Product Information Associated with a URL 322] --> 324[Associate the Received URL with the Product Information of the Item or Package 324] 324 --> 326[Verify Authenticity of the URL 326] 326 --> 328[Provide Authenticity Information of the URL 328] 328 --> 330[Process Information Associated with the Request Such as Identity of the Requestor, Location of the Request, Time of the Request 330] 330 --> 332[Providing at Least a Portion of Product Information Associated with at Least a Portion of the URL Based on Information Associated with the Request 332] </pre> </div> <p data-bbox="792 1346 899 1377">FIG. 3C</p> <p data-bbox="532 1430 1416 1608">[0003]: “In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</p> <p data-bbox="532 1650 1416 1717">[0013]: “FIG. 1 illustrates an example of a consumer device and/or a client communicating with a server module</p> <p data-bbox="532 1759 1416 1898">[0035-0036]: “Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the</p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product."</i></p> <p>[0044]: <i>"[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone."</i></p> <p>[0045]: <i>"FIG. 1 illustrates an example of a consumer device 106 and/or a client 102 communicating with a server module 100 to access product information coding and authentication services through a network 110, according to one embodiment."</i></p> <p>[0049] <i>"The network 110, over which the client 102, the consumer device 106 and the server module 100 communicate..."</i></p> <p>[0051]: <i>"...communicating a request to the server module 100..."</i></p> <p>[0055]: <i>"The consumer device 106 may be any device having networking capabilities (e.g., mobile phone, PDA, notebook, desktop computer, etc.) able to send a product code/URL that is to be authenticated through the network 110 to the server module 100."</i></p> <p>[0056]: <i>"The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed."</i></p> <p>[0074]: <i>"In process 322, the coding service provider receives a request for product information associated with a URL. In operation 324, the received URL is associated with the product information of the item or package. In operation 326, authenticity of the URL is verified."</i></p> <p>To one skilled in the art, discussions pertaining to the sending or transmission of information (data) implies that there HAS to be a</p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	remote (physically disparate) device (e.g. computer, server, website, etc.). Self teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.
receiving information about the object from the remote server wherein the information is based on the decode string of the object;	<p>Through at least the following examples, Self teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., "the product information about the item or package associated with the URL").</p> <p>Fig. 1 (above), Fig. 3B (above), Fig. 3C (above)</p> <p>[0003]: <i>"The decoded URL can then be accessed by the camera phone through a network. Since use of camera phones has become widespread, information encoded with QR codes can be conveniently read by anyone carrying a cellular phone with a camera. This method is typically used to provide a link to a web page containing more information about an advertisement of a product or service in a magazine, newspaper, or other printed publication."</i></p> <p>[0013]: <i>"FIG. 1 illustrates an example of a consumer device and/or a client communicating with a server module to access product identification services using a URL ..."</i></p> <p>[0035-0036]: <i>"Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product."</i></p> <p>[0044]: <i>"[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone."</i></p> <p>[0051]: <i>"...communicating a request to the server module 100..."</i></p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p>[0055]: <i>"The consumer device 106 may be any device having networking capabilities (e.g., mobile phone, PDA, notebook, desktop computer, etc.) able to send a product code/URL that is to be authenticated through the network 110 to the server module 100."</i></p> <p>[0056]: <i>"The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed."</i></p> <p>[0072]: <i>"In operation 318, the product information about the item or package associated with the URL is received by the requester."</i></p> <p>[0075]: <i>"In operation 332, at least a portion of the product information associated with at least a portion of the URL is provided based on the information associated with the request."</i></p> <p>To one skilled in the art, Self teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Self teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the portable electronic device.	<p>Through at least the following examples, Self teaches that the portable electronic device displays the received information on a display device (e.g., "displayed on the verification screen") associated with the portable electronic device.</p> <p>[0035-0036]: <i>"Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded</i></p>

'752 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</i></p> <p>[0044]: <i>“[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</i></p> <p>[0056]: <i>“The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</i></p> <p>[0057]: <i>“In addition to communicating authentication results to the consumer device 106, alternate information revealed during the decryption process, such as product information, expiration date, manufacturing location, may also be communicated to the consumer device 106 and displayed accordingly.”</i></p> <p>[0058]: <i>“Furthermore, product information including the brand, type of product, UPC code is also determined and displayed on the verification screen. In one embodiment, a product image is also displayed.”</i></p> <p>Self teaches that the portable electronic device is able to display the received information. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.</p>

EXHIBIT H – ‘190 PATENT

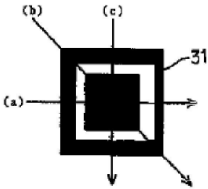
Japanese patent 2002-118680 teaches use of a mobile electronic device as a means for capturing 2D matrix bar code symbols (e.g. QR Codes) for decoding and as a means to obtain information from a remote computer server (e.g. web site) for display on the mobile electronic device. It is my opinion that Ekusa anticipates Claim 1 of the ‘190 patent.

'190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
A method comprising:	<p>Ekusa teaches a method through at least the following examples.</p> <p>FIG. 7</p> <pre>graph TD START([START]) --> S101[Activation of OFF timer S101] S101 --> S102{S102 Has the time run out?} S102 -- YES --> S108[END processing S108] S102 -- NO --> S103{S103 END operation performed?} S103 -- YES --> S108 S103 -- NO --> S104{S104 Connection operation performed?} S104 -- YES --> S110[Display the method of connecting to the information center on the screen S110] S104 -- NO --> S105{S105 Readout operation performed?} S105 -- YES --> S109[Read out the deciphered data of the stored QR code and display it on the screen S109] S105 -- NO --> S106{S106 Scanning operation performed?} S106 -- YES --> S107[Code scan processing S107] S106 -- NO --> S102 S107 --> S109 S109 --> S111[Connect to the information center through the use of the connection information of the advertisement displayed on the screen S111] S111 --> S112[Receive information, which prompts the transmission of the advertisement identification code and medium identification code, from the information center. S112] S112 --> S113[Transmit the advertisement identification code and medium identification code to the information center. S113] S113 --> S114[Receive detailed information applicable to the advertisement identification code from the information center. S114] S114 --> S115[Display the detailed information thus received. S115] S115 --> S102 S108 --> END([END])</pre>

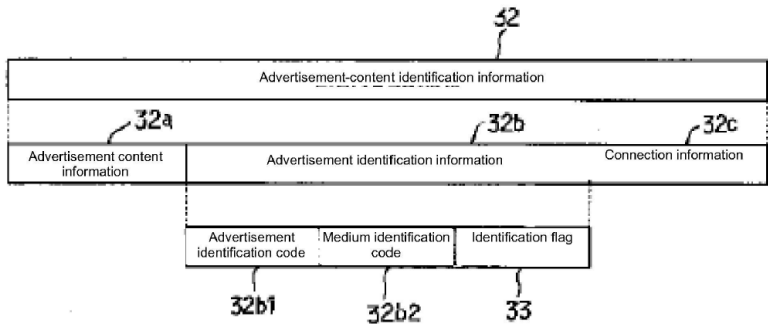
<p>‘190 Patent</p>	<p>Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002</p>
	<p>FIG. 8</p> <p>Code Scan Processing</p> <pre> graph TD START([START]) --> S201[S201: Input image data] S201 --> S202[S202: Create binary image data] S202 --> S203[S203: Search for code characteristic pattern] S203 --> S204{S204: Is there a characteristic pattern?} S204 -- NO --> S213[S213: Indication that it is not an advertisement code] S204 -- YES --> S205[S205: Check the peripheral position of the code and determine the code region] S205 --> S206[S206: Determine light or dark of each data cell] S206 --> S207[S207: Convert all data cell into data bit string] S207 --> S208[S208: Check errors in the data bit string and correct errors, if any] S208 --> S209[S209: Convert the data bit string into a character code] S209 --> S210{S210: Is there an identification flag?} S210 -- NO --> S213 S210 -- YES --> 211[211: Classify the data: • n characters before the identification flag → information on the ad content • n characters before the identification flag → ad information code • n characters before the identification flag → medium information code • n characters before the identification flag → connection information] 211 --> S212[S212: Display the advertisement content information] S212 --> END([END]) S213 --> END </pre> <p>As can be seen in the preceding examples, Ekusa teaches a method. And to the extent that the words “A method comprising...” are not explicitly used, one skilled in the art would immediately understand that a method of usage is being taught.</p>
<p>capturing a digital image using a digital image capturing device that</p>	<p>Through at least the following examples, Ekusa teaches that a digital image may be captured using a digital image capturing device (e.g., “imaging part 18”) that is part of a portable electronic device (e.g.,</p>

<p>‘190 Patent</p>	<p>Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002</p>
<p>is part of an electronic device;</p>	<p>“portable telephone 7”).</p> <p><i>Claim 1:</i> “A portable communication terminal comprising: An imaging means for capturing a two-dimensional code”</p> <p>FIG. 1</p> <p>[0006]: “According to the invention of Claim 1, once an imaging means has captured a two-dimensional code...”</p> <p>[0014]: “A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function [image capture] for scanning and thus reading the QR code 4 so that, when the user sees the advertisement and wants to obtain information on the product or service printed on the advertisement, he or she can use the portable telephone 7 to scan the QR code 4...”</p> <p>[0023]: “Now, the CPU 23 is configured to process images, which are captured by the imaging part 18 provided in the portable telephone 7, according to the mode. Stated another way, the portable telephone 7 is set in the photography mode or the QRcode scan mode.”</p> <p>[0024]: “To be more specific, the imaging part 18 provided in the portable telephone 7 can capture digital photography in the same way as a regular digital camera.”</p>

'190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>[0025]: <i>"Meanwhile, when the user wants to use the portable telephone 7 to scan a QR code 4, he or she operates the shutter key in the key operation part 14, doing so in the state where the QR-code scan mode is selected and set. In this case, once the imaging part 18 captures the QR code 4"</i></p> <p>[0049]: <i>"...Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4,..."</i></p> <p>To one skilled in the art, the scanning of a symbol in the context of Ekusa is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Ekusa teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with the digital image using the electronic device;	<p>Through at least the following examples, Ekusa teaches that a symbology (e.g., "QR code 4") associated with an object (e.g., "advertising media 6") within the digital image is detected using the portable electronic device.</p> <p><i>Claim 1:</i> <i>"A decoding means for deciphering the two dimensional code captured by said imaging means and converting it into data"</i></p> <p>[0006]: <i>"According to the invention of Claim 1, once an imaging means has captured a two-dimensional code, a decoding means decipheres the two-dimensional code captured by the imaging means..."</i></p> <p>[0013]: <i>"The advertisement client 1 requests ... that the advertiser 5 print the QR code ... onto advertising media 6 such as posters, wall banners or community magazines, etc."</i></p> <p>[0014]: <i>"A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function for scanning and thus reading the QR code 4..."</i></p> <p>[0024]: <i>"...When it captures a QR code 4, which contains coded information, it can decode the QR code 4 and thereby convert the</i></p>

‘190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>code into textual information.”</i></p> <p>[0025]: “...In this case, once the imaging part 18 captures the QR code 4, the image data of the captured QR code 4 is provided to the CPU 23. The CPU 23, when provided with a QR code 4, decodes the QR code 4...”</p> <p>[0027]: “Figure 5 shows a positioning symbol. In said Figure 5, the positioning symbol 31 is configured so that contrast (dark/light) component ratio of the pattern passing through the center of the positioning symbol 31 (as represented by the patterns (a), (b) and (c) in Figure 4) would be dark:light:dark:light:dark = 1:1:3:1:1. Thus, the CPU 23 obtains the ratio of the length of continuous light (1) and the length of continuous dark (0) in a QR image, thereby detecting a pattern applicable to the positioning symbol 31 of the QR code 4 based on said ratio of the lengths. It also executes code processing and can thereby determine whether the QR code 4 is present in the image based on whether three positioning symbols are present at appropriate positions. ”</p> <p>FIG. 5</p>  <p>[0034]: “Now, in order for the user to operate the imaging part 18 of the portable telephone 7 so as to scan a QR code 4, ... Here, the CPU 23 of the portable telephone 7 executes code scan processing when the scanning operation is performed (S107).”</p> <p>[0035]: “Figure 8 shows the code scan processing by the CPU 23. In said Figure 8, the CPU 23 inputs image data first (S201) and then creates binary image data (S202). Subsequently, it searches for the presence of a positioning symbol's characteristic pattern in the binary image data (S203).”</p> <p>[0049]: “... Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4...”</p> <p>To one skilled in the art, “reading” of a bar code symbol is synonymous with both detecting and decoding of the symbol of</p>

‘190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	interest. Eksua teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Ekusa doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the electronic device;	<p>Through at least the following examples, Ekusa teaches that the symbology is decoded to obtain a decode string (e.g., “textual information” such as “advertisement identification information 32b”) using a visual detection application (e.g., “a program stored in ROM 24”) residing on the portable electronic device .</p> <p><i>Claim 1:</i> <i>“A decoding means for deciphering the two dimensional code captured by said imaging means and converting it into data”</i></p> <p>[0006]: <i>“According to the invention of Claim 1, once an imaging means has captured a two-dimensional code, a decoding means deciphers the two-dimensional code captured by the imaging means and transforms it into data. ...”</i></p> <p>[0014]: <i>“A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function for scanning and thus reading the QR code”</i></p> <p>[0020]: <i>“Additionally, the portable telephone 7 is primarily comprised of a CPU (which corresponds to the decoding means...”</i></p> <p>[0024]: <i>“...When it captures a QR code 4, which contains coded information, it can decode the QR code 4 and thereby convert the code into textual information.”</i></p> <p>[0025]: <i>“...In this case, once the imaging part 18 captures the QR code 4, the image data of the captured QR code 4 is provided to the CPU 23. The CPU 23, when provided with a QR code 4, decodes the QR code 4...”</i></p> <p>[0028]: <i>“Then, it executes decoding based on the type of each cell and thus obtains information represented by the two-dimensional information code.”</i></p> <p>[0029] <i>“Figure 6 shows information recorded on the QR code 4. In said Figure 6, the advertisement-content identification information</i></p>

'190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002												
	<p>32, which is used to identify advertisement information (which corresponds to connection information), is stored in the QR code 4. The advertisement-content identification information 32 concerned consists of advertisement content information 32a, advertisement identification information 32b and connection information 32c.”</p> <p>FIG. 6</p>  <p>[0036]: “Meanwhile, when binary image data has a characteristic pattern (S204: YES), the CPU 23 checks the peripheral position of the code determined based on the positioning symbols, it determines the code region (S205). Subsequently, it obtains the positions of the data cells situated in the code region based on the positioning symbols and determines the light or dark of each data cell (S206). Subsequently, it converts each data cell into a data bit string (S207) while checking for errors in the data bit string and correcting errors, if any (S208), and then converts the data bit string into a character code (S209).”</p> <p>Fig. 9:</p> <table><tr><th>Ad content</th><th>Connection info</th><th>Ad identification code</th><th>Medium identification code</th></tr><tr><td>Digital navigation system</td><td>http://www.DENSO.co.jp</td><td>aaaaaaaaa</td><td>bbbbbbbbb</td></tr><tr><td>OXOX Moving Center</td><td>012-123-4567</td><td>gggggggggg</td><td>hhhhhhhhh</td></tr></table> <p>[0049]: “According to such an embodiment, a QR code 4, which indicates advertisement identification information (including connection information), is printed on the advertising media 6. Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes...”</p> <p>To one skilled in the art, “reading” of a bar code symbol is synonymous with both detecting and decoding of the symbol of interest. Furthermore, to one skilled in the art, the conversion of</p>	Ad content	Connection info	Ad identification code	Medium identification code	Digital navigation system	http://www.DENSO.co.jp	aaaaaaaaa	bbbbbbbbb	OXOX Moving Center	012-123-4567	gggggggggg	hhhhhhhhh
Ad content	Connection info	Ad identification code	Medium identification code										
Digital navigation system	http://www.DENSO.co.jp	aaaaaaaaa	bbbbbbbbb										
OXOX Moving Center	012-123-4567	gggggggggg	hhhhhhhhh										

'190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	dark and light data cells within a QR Code is the technical means by which a 2D matrix symbol is decoded. Eksua teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.
sending the decode string to a remote server for processing;	<p>Through at least the following examples, Ekusa teaches sending the decode string to a remote server (e.g., "WWW server 3") for processing.</p> <p><i>Claim 4:</i> <i>"The portable communication terminal device according to any one of the claims 1 through 4, characterized by comprising an automatic transmission means for automatically transmitting given data (other than the connection destination data) to the connection destination's device concerned, doing so when said connection means connects to the connection destination's device according to the connection destination data."</i></p> <p>[0015]: <i>"The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time."</i></p> <p>[0040]: <i>"In this case, the assumption is that the connection method thus displayed instructs connection to the website's URL, which is set up in the WWW server 3 of the information center 2. Connection to the URL is automatically established when the connection method is set in the automatic connection mode. Stated another way, the WWW browser is activated automatically, whereby it accesses the website on the WWW server 3 of the information center 2 via a mobile phone network and the Internet..."</i></p> <p>[0042] <i>"When accessed by the portable telephone 7, the WWW server 3 of the information center 2 transmits information, which prompts the transmission of an advertisement identification code and a medium identification code. Accordingly, when the CPU 23 of the portable telephone 7 receives such information (S112), it transmits the advertisement identification code and the medium identification code, which are stored therein, to the WWW server 3</i></p>

'190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>(S113).”</p> <p>[0043] “Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code.”</p> <p>[0049]: “...Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4, the advertisement identification information indicated by the QR code will be stored in the portable telephone 7. Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</p> <p>To one skilled in the art, the term “decode string” is synonymous with the term “decoded data” or “symbology data.” Additionally, the term “sending the decode string” is synonymous with the terms “transmitting”, “transmitting the data”, “transmitting the symbology data” and “transmitting the decoded data.” Finally, to one skilled in the art, discussions pertaining to transmission of information (data) implicitly implies that there HAS to be a remote (physically disparate) device (e.g. computer, server, website, etc.). Ekusa teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.</p>
receiving information about the digital image from the remote server wherein the information is based on the decode string;	<p>Through at least the following examples, Ekusa teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “detailed information applicable to the advertisement identification code”).</p> <p><i>Abstract:</i></p> <p>“When the user sees the advertisement and wants to obtain information on the advertisement, he or she captures the QR code 4 with a portable telephone 7 provided with a photographic function.</p>

‘190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>The portable telephone 7 accesses the information center 2 according to the connection information indicated by the QR code 4, thus allowing the user to easily access the information center 2...”</i></p> <p>Fig. 1 (above); Fig. 7 (above); Fig. 8 (above) and associated text.</p> <p>[0015]: <i>“The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time.”</i></p> <p>[0031]: <i>“As software used to connect to the Internet, for example, a WWW browser is stored in the ROM 24 of the portable telephone 7. By activating said WWW browser, it becomes possible to access the website provided on the WWW server, which is connected to the Internet, from the portable telephone 7 in order to download data containing necessary data, or to access a database provided on the WWW server in order to write data.”</i></p> <p>[0038]: <i>“In this case, the connection information is either a website address on the WWW server 3 of the information center 2 In the case of access through connection to the website, one can download”</i></p> <p>[0040]: <i>“In this case, the assumption is that the connection method thus displayed instructs connection to the website's URL, which is set up in the WWW server 3 of the information center 2. Connection to the URL is automatically established when the connection method is set in the automatic connection mode. Stated another way, the WWW browser is activated automatically, whereby it accesses the website on the WWW server 3 of the information center 2 via a mobile phone network and the Internet. In response to said access, information (contents data) on the product or service such as images, text, audio, etc., can be downloaded into the portable telephone 7 from the website on the WWW server 3 of the information center 2 ...”</i></p> <p>[0043] <i>“Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code. Accordingly, once the CPU 23 of the portable</i></p>

‘190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>telephone 7 receives the detailed information applicable to the advertisement identification code (S114), it displays the received detailed information on the display part 16 (S115). Thus, the user can view detailed information regarding the advertisement or service.”</i></p> <p><i>[0049]: “...Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</i></p> <p>Ekusa teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Ekusa teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Ekusa doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the electronic device.	<p>Through at least the following examples, Ekusa teaches that the portable electronic device displays the received information on a display device (e.g., “display part 16”) associated with the portable electronic device.</p> <p>Fig. 1 (above); Fig. 7 (above); Fig. 8 (above) and associated text.</p> <p><i>[0012]: “Said advertisement-content identification information contains information used to identify the advertisement, data used to display the content of the advertisement, and connection information used for connection to the information center.”</i></p> <p><i>[0014] “Because information on the product or service is stored in said QR code 4, the user may cause the information on the product or service (which is stored in the portable telephone 7) to be displayed on the portable telephone 7 itself, a PDA (Personal Digital Assistant) 8 or a car navigation system 9 that is connected to the portable telephone 7, thereby making it possible to obtain the information on the product or service at any time.”</i></p>

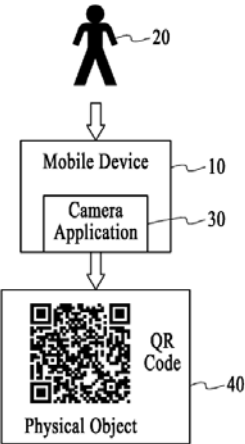
‘190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>[0015]: <i>“The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time.”</i></p> <p>[0018]: <i>“Figure 3 shows the portable telephone 7. In said Figure 3, the front surface of the housing 13 of the portable telephone 7 comprises a key operation part 14 consisting of multiple operation keys, a microphone 15, a display part 16 comprising an LCD”</i></p> <p>[0038]: <i>“In this case, the connection information is either a website address on the WWW server 3 of the information center 2 In the case of access through connection to the website, one can download the content and thereby view detailed information on the product or service.”</i></p> <p>[0040]: <i>“In response to said access, information (contents data) on the product or service such as images, text, audio, etc., can be downloaded into the portable telephone 7 from the website on the WWW server 3 of the information center 2 and then displayed on the display part 16.”</i></p> <p>[0043] <i>“Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code. Accordingly, once the CPU 23 of the portable telephone 7 receives the detailed information applicable to the advertisement identification code (S114), it displays the received detailed information on the display part 16 (S115). Thus, the user can view detailed information regarding the advertisement or service.”</i></p> <p>[0049]: <i>“... Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</i></p>

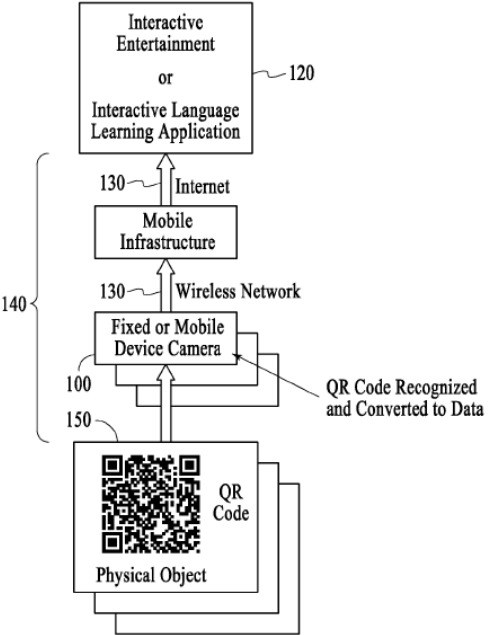
'190 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	Ekusa teaches that the portable electronic device is able to display the received information. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.

EXHIBIT I – ‘190 PATENT

US Patent Application 2009/0108057 teaches the use of QR Codes that scanned by mobile devices as a means of providing interactive experiences that have been retrieved from remote servers on the mobile device. It is my opinion that Mu anticipates Claim 1 of the ‘190 patent.

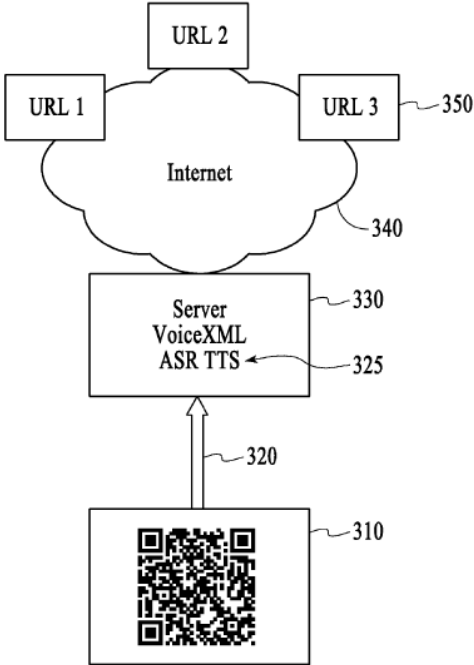
‘190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
A method comprising:	<p>Mu teaches a method through at least the following examples</p> <p><i>Abstract: “Systems and methods are described that include using quick response (QR) codes with mobile devices for providing interactive applications and services to a user via the mobile devices...”</i></p> <p><i>Claim 1: “1. A method comprising:...”</i></p> <p><i>[0014]: “Methods and systems are described below for using QR codes on or in physical objects to launch interactive learning sessions when scanned with a client device having an optical sensing device or camera.”</i></p> <p>As can be seen in the preceding examples, Mu teaches a method.</p>
capturing a digital image using a digital image capturing device that is part of an electronic device;	<p>Through at least the following examples, Mu teaches that a digital image may be captured using a digital image capturing device (e.g., “optical sensing device or camera”) that is part of a portable electronic device.</p> <p><i>Claim 10: “scanning a quick response (QR) code using a component of a mobile device...”</i></p> <p><i>Claim 11: “...a client device including a scanner...”</i></p> <p>Fig 1.</p>

‘190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	 <p>The diagram shows a user (20) interacting with a mobile device (10). The mobile device contains a camera application (30). The camera application is used to scan a QR code (40) located on a physical object. Arrows indicate the flow of interaction: from the user to the mobile device, from the camera application to the QR code, and from the QR code back to the mobile device.</p> <p>[0014]: “Methods and systems are described below for using QR codes on or in physical objects to launch interactive learning sessions when scanned with a client device having an optical sensing device or camera.”</p> <p>[0021]: “FIG. 1 shows a client device configured to scan a QR code, under an embodiment. The client device 10 is operated by a user 20 and includes and processes all applications corresponding to QR code recognition activities. These applications include a camera application 30 for scanning the QR Code from a physical object 40, but the applications are not so limited.”</p> <p>[0040]: “The systems and methods described herein include a method for using QR codes with mobile devices for education and training services. The method of an embodiment uses an optical device or component hosted on or in a client device (e.g., mobile device) to scan the QR code of a card, portion of a book, portion of a magazine, portion of a newspaper, physical object, and/or display screen or device...”</p> <p>To one skilled in the art, the scanning of a symbol in the context of Mu is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Mu teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Mu doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with the	Through at least the following examples, Mu teaches that symbology (e.g., “QR code”) associated with an object (e.g.,

<p>‘190 Patent</p>	<p>U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009</p>
<p>digital image using the electronic device;</p>	<p>“Physical Object 40” as shown in Figs. 1 and 2, such as “games, toys or just about any object about which a user might want information”) within the digital image is detected using the portable electronic device.</p> <p>Fig 2.</p>  <p>Claim 6: <i>“The method of Claim 1, comprising generating the data of the QR code by decoding the QR code at the mobile device”</i></p> <p>Claim 12: <i>“The system of Claim 11, wherein the mobile device decodes the QR code.”</i></p> <p>[0018]: <i>“QR codes storing addresses and URLs may appear in books, on object packaging, games, toys or just about any object about which a user might want information.”</i></p> <p>[0019]: <i>“Typically, the client will be configured to decode the QR code locally”</i></p> <p>[0022] <i>“In an embodiment, QR code recognition processing is performed via a client device...”</i></p> <p>[0023] <i>“...These downloaded applications are subsequently run on the client 100 during the execution of the QR code recognition exercises.”</i></p>

'190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for processing...The client decoder 220 sends the QR code data..."</i></p> <p>To one skilled in the art, "reading" of a bar code symbol in the context of Mu is synonymous with both detecting and decoding of the symbol of interest. Furthermore, it is understood by one skilled in the art that if a bar code symbol is decoded it MUST first be detected. Mu teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.</p>
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the electronic device;	<p>Through at least the following examples, Mu teaches that the symbology is decoded to obtain a decode string (e.g., "decoded QR code data") using a visual detection application (e.g., "reader software" or "QR code recognition program" such as "a camera application 30 for scanning the QR Code from a physical object 40") residing on the portable electronic device.</p> <p>Claim 1: <i>"...receiving data of a quick response (QR) code at a mobile device, the data of the QR code received from a scan of the QR code;"</i></p> <p>Claim 6: <i>"The method of Claim 1, comprising generating the data of the QR code by decoding the QR code at the mobile device"</i></p> <p>Claim 10: <i>"...decoding the QR code"</i></p> <p>Claim 12: <i>"The system of Claim 11, wherein the mobile device decodes the QR code."</i></p> <p>Fig. 1 (above); Fig. 2 (above); Fig. 3 (above) and associated text.</p> <p>[0018]: <i>"Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.)..."</i></p> <p>[0019]: <i>"Typically, the client will be configured to decode the QR code locally rather than transferring the QR code to the server for interpretation..."</i></p> <p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for</i></p>

'190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>processing...The client decoder 220 sends the QR code data..."</i></p> <p>[0035]: <i>"In an alternative embodiment, the QR code is decoded by or within the client and the resulting URL is used by the client to make a connection."</i></p> <p>To one skilled in the art, "reading" of a bar code symbol in the context of Mu is synonymous with both detecting and decoding of the symbol of interest. Furthermore, to one skilled in the art, the conversion of dark and light data cells within a QR Code is the technical means by which a 2D matrix symbol is decoded. Mu teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.</p>
sending the decode string to a remote server for processing;	<p>Through at least the following examples, Mu teaches sending the decode string to a remote server (e.g., "server 120") for processing.</p> <p>Fig. 2 (above); Fig. 3 (above); Fig 5. (above) and associated text.</p> <p>[0018]: <i>"Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.). The client can also be configured to receive data from a remote device in response to the transmitted QR code data. For example, the client can transmit the QR code data and speech data to a remote server or specified uniform resource locator (URL)..."</i></p> <p>[0019]: <i>"Typically, the client will be configured to decode the QR code locally rather than transferring the QR code to the server for interpretation, but the client is not so limited. A user having a client device with a scanner, for example a camera telephone phone equipped with a reader and reader software can scan and decode the image of the QR code causing the phone's browser to launch and redirect to the programmed URL."</i></p> <p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for processing in interactive entertainment or interactive language learning applications, under an embodiment..."</i></p> <p>[0026]: <i>"In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via</i></p>

<p>‘190 Patent</p>	<p>U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009</p>
	<p><i>their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function...</i></p> <p>Fig 4.</p>  <p>[0033]: “FIG. 4 shows connection to URLs via a decoded QR code in interactive entertainment or interactive language learning applications, under an embodiment. A QR code received by a client device is decoded 320 and transferred to a server where it is processed or analyzed...”</p> <p>[0040]: “...The method of an embodiment transfers or transmits the decoded QR code data from the mobile device to a URL as determined from the QR code data...”</p> <p>[0036]: “FIG. 5 is a flow diagram for a multimedia object playback thread, under an embodiment. Operation begins when the decoded QR code information is provided to or received at the server...”</p> <p>To one skilled in the art, the term “decode string” in the context of Mu is synonymous with the term “decoded data” or “symbolology data.” Additionally, the term “sending the decode string” is synonymous with the terms “transmitting”, “transmitting the data”, “transmitting the symbolology data” and “transmitting the decoded data.” Finally, to one skilled in the art, discussions pertaining to transmission of information (data) implicitly implies that there HAS</p>

'190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	to be a remote (physically disparate) device (e.g. computer, server, website, etc.). Mu teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.
receiving information about the digital image from the remote server wherein the information is based on the decode string;	<p>Through at least the following examples, Mu teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., "A selected multimedia object corresponding to the QR code").</p> <p>Abstract: "...A selected multimedia object corresponding to the QR code is retrieved from the URL or a database. The selected multimedia object is transferred to the mobile device for playback."</p> <p>Claim 1: "...selecting a multimedia object corresponding to the data of the QR code and retrieving the multimedia object via one of the URL and a database;"</p> <p>Claim 7: "...transmitting the multimedia object to the mobile device using at least one transmission packet, wherein the at least one transmission packet of the multimedia object is transmitted to the mobile device via a mobile internet connection."</p> <p>Claim 11: "...a server coupled to the client device via a network, the server receiving the QR code from the client device, the server identifying and retrieving a multimedia object corresponding to the QR code, and the server transmitting the multimedia object to the mobile device."</p> <p>Claim 15: "The system of Claim 11, wherein the mobile device receives the multimedia object and presents the multimedia object to a user via at least one of a display and an audio device."</p> <p>[0018]: "Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.). The client can also be configured to receive data from a remote device in response to the transmitted QR code data. For example, the client can transmit the QR code data and speech data to a remote server or specified uniform resource locator (URL), which then returns back a multimedia object or menu of additional choices. QR codes storing addresses and URLs may</p>

'190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>appear in books, on object packaging, games, toys or just about any object about which a user might want information."</i></p> <p>[0026]: <i>"In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function... The QR code function of an embodiment also includes use of the URL from the decoded QR code to return a multimedia object or web page to the client. The proper XML file is returned to the client from the server, via the Internet or wireless network, and the client's browser displays the text, graphics and multimedia data of the file on the client's screen. The user may then perform various entertainment or language learning exercises at the direction of the displayed web page."</i></p> <p>[0029]: <i>"In response to transmission of the QR code by the client, the client receives an XML file 250 comprising a web page from the server for use in an entertainment or language learning activity, and the client device 210 displays the text, graphics and multimedia data of the file to the user 200. When the user thereafter selects an exercise via the displayed web page"</i></p> <p>Fig. 3 (above), Fig. 5 (above), and associated text.</p> <p>[0040]: <i>"The systems and methods described herein include a method for using QR codes with mobile devices for education and training services. The method of an embodiment uses an optical device or component hosted on or in a client device (e.g., mobile device) to scan the QR code of a card, portion of a book, portion of a magazine, portion of a newspaper, physical object, and/or display screen or device. The method of an embodiment decodes the QR code in the mobile device. The method of an embodiment transfers or transmits the decoded QR code data from the mobile device to a URL as determined from the QR code data. The method of an embodiment catalogs the QR code data. The method of an embodiment associates the decoded QR code to a multimedia object in a database. The method of an embodiment retrieves the corresponding multimedia object from the database. The method of an embodiment transfers the corresponding multimedia object retrieved or read from the database to the mobile device for playback. The method of an embodiment can also transfers the corresponding multimedia object retrieved or read from the database to another device for playback or input into another software program or service."</i></p>

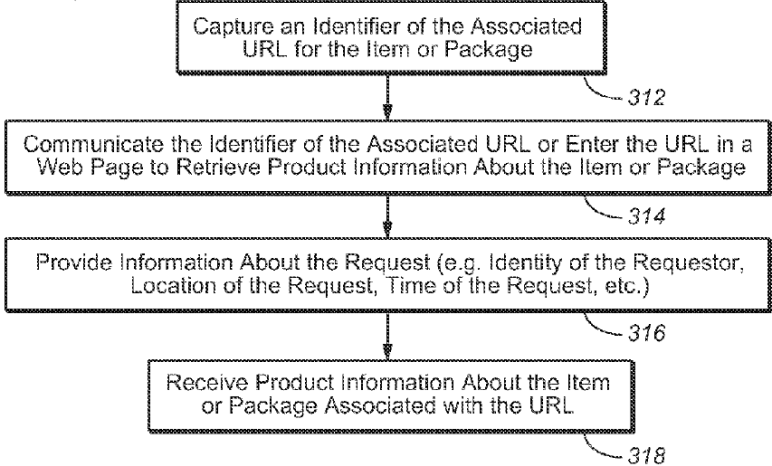
‘190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p>[0036]: <i>“FIG. 5 is a flow diagram for a multimedia object playback thread, under an embodiment. Operation begins when the decoded QR code information is provided to or received at the server. The server determines if the received information is in the master index. If the received QR code information is not in the master index, the item is cataloged and quarantined for subsequent action. If the QR code information is identified in the master index, the audiovisual object is retrieved by the server, which then determines if a format conversion is necessary, performs such a conversion if needed, and then delivers the audiovisual object to the device for presentation.”</i></p> <p>Mu teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Mu teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Mu doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the electronic device.	<p>Through at least the following examples, Mu teaches that the portable electronic device displays the received information on a display device (e.g., “the client’s screen”) associated with the portable electronic device.</p> <p>Abstract: <i>“...The selected multimedia object is transferred to the mobile device for playback.”</i></p> <p>Claim 2: <i>“The method of Claim 1, comprising receiving the multimedia object at the mobile device and presenting the multimedia object to a user via at least one of a display and an audio device of the mobile device.”</i></p> <p>Claim 10: <i>“...transmitting the multimedia object to at least one of the mobile device for playback and a remote device for at least one of playback, input into an application, and input into a service.</i></p> <p>[0026]: <i>“In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function. The QR code function of an embodiment includes a QR code processing exercise from the server supporting QR code recognition. The QR code function of an</i></p>

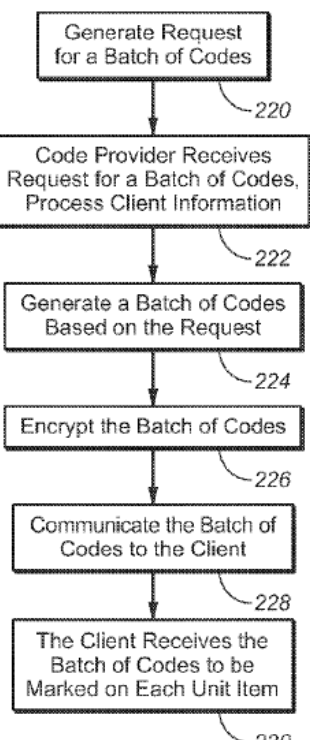
'190 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>embodiment also includes use of the URL from the decoded QR code to return a multimedia object or web page to the client. The proper XML file is returned to the client from the server, via the Internet or wireless network, and the client's browser displays the text, graphics and multimedia data of the file on the client's screen. The user may then perform various entertainment or language learning exercises at the direction of the displayed web page."</i></p> <p>[0029]: <i>"In response to transmission of the QR code by the client, the client receives an XML file 250 comprising a web page from the server for use in an entertainment or language learning activity, and the client device 210 displays the text, graphics and multimedia data of the file to the user 200. When the user thereafter selects an exercise via the displayed web page, a script associated with the selected exercise activates a browser component."</i></p> <p>[0030]: <i>"In an embodiment, a text response is returned to the client from the server, which is displayed on a portion of the screen already displaying the current web page for the activity accessed by the user. In an alternative embodiment, an entirely new XML page 250 is returned from the server 240, which is displayed as a new web page to the user, via the client screen on the mobile device 210."</i></p> <p>[0048]: <i>"The method of an embodiment comprises receiving the multimedia object at the mobile device and presenting the multimedia object to a user via at least one of a display and an audio device of the mobile device."</i></p> <p>Mu teaches that the portable electronic device is able to display the received information. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.</p>

EXHIBIT M – ‘190 PATENT

US Patent Application 2007/0215685 A1 teaches use of a mobile electronic device as a means for capturing 2D matrix bar code symbols (e.g. QR Codes) for decoding and as a means to obtain information from a remote computer server (e.g. web site) for display on the mobile electronic device. It is my opinion that Self (et al.) anticipates Claim 1 of the ‘190 patent.

‘190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
A method comprising:	<p>Self teaches a method through at least the following examples.</p> <p>Claim 1: “<i>A method comprising:</i>”</p> <p>[0008]: “<i>Methods and systems for product identification using a URL...</i>”</p> <p>[0017-0018]: “<i>FIG. 3B is a flow chart describing an overview of an example process of product information request with an associated URL, according to one embodiment. FIG. 3C is a flow chart describing an overview of an example process of providing product information in response to receiving a request for product information with a URL, according to one embodiment.</i>”</p> <p>As can be seen in the preceding examples, Self teaches a method. And to the extent that the words “A method comprising...” are not explicitly used, one skilled in the art would immediately understand that a method of usage is being taught.</p>
capturing a digital image using a digital image capturing device that is part of an electronic device;	<p>Through at least the following examples, Self teaches that a digital image may be captured using a digital image capturing device (e.g., “an image capturing device such as a digital camera”) that is part of a portable electronic device (e.g., “camera phone”).</p> <p>Claim 12: “<i>The method of claim 5 wherein the bar code is scannable by an image capturing device.</i>”</p> <p>Claim 13: “<i>The method of claim 6 wherein the image capturing device is an electronic device that is at least one of a mobile phone, a digital camera, a laptop computer, a PDA, a desktop computer, a scanner, or a camera.</i>”</p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p data-bbox="548 279 646 321">300B</p>  <pre> graph TD 312[Capture an Identifier of the Associated URL for the Item or Package] --> 314[Communicate the Identifier of the Associated URL or Enter the URL in a Web Page to Retrieve Product Information About the Item or Package] 314 --> 316[Provide Information About the Request (e.g. Identity of the Requestor, Location of the Request, Time of the Request, etc.)] 316 --> 318[Receive Product Information About the Item or Package Associated with the URL] </pre> <p data-bbox="878 793 1040 835">FIG. 3B</p> <p data-bbox="532 877 1414 1056">[0003]: “In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</p> <p data-bbox="532 1098 1414 1381">[0035-0036]: “Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</p> <p data-bbox="532 1423 1414 1528">[0044]: “the product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</p> <p data-bbox="532 1570 1414 1791">[0056]: “The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</p> <p data-bbox="532 1833 1414 1894">[0069]: “[T]he identifier is automatically captured with an image capturing device such as a digital camera, a camera, digital</p>

‘190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>cameras built into portable devices (e.g., cell phones, PDAs, laptop computers etc), or a scanner.”</i></p> <p>To one skilled in the art, the scanning of a symbol with a camera in the context of Self is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Self teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with the digital image using the electronic device;	<p>Through at least the following examples, Self teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “to be marked on each unit item”) within the digital image is detected using the portable electronic device.</p> <p>Claim 12: “<i>The method of claim 5 wherein the bar code is scannable by an image capturing device.</i>”</p>  <pre> graph TD 220[Generate Request for a Batch of Codes] --> 222[Code Provider Receives Request for a Batch of Codes, Process Client Information] 222 --> 224[Generate a Batch of Codes Based on the Request] 224 --> 226[Encrypt the Batch of Codes] 226 --> 228[Communicate the Batch of Codes to the Client] 228 --> 230[The Client Receives the Batch of Codes to be Marked on Each Unit Item] </pre> <p>FIG. 2A</p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<div data-bbox="568 294 795 472" data-label="Image"> </div> <div data-bbox="633 493 795 546" data-label="Caption"> <p>FIG. 6B</p> </div> <div data-bbox="527 598 1425 787" data-label="Text"> <p>[0003]: <i>“In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</i></p> </div> <div data-bbox="527 819 1425 1113" data-label="Text"> <p>[0035-0036]: <i>“Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</i></p> </div> <div data-bbox="527 1144 1425 1260" data-label="Text"> <p>[0044]: <i>“[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</i></p> </div> <div data-bbox="527 1291 1425 1522" data-label="Text"> <p>[0056]: <i>“The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</i></p> </div> <div data-bbox="527 1543 1425 1585" data-label="Text"> <p>[0060]: <i>“...to be marked on each unit item...”</i></p> </div> <div data-bbox="527 1617 1425 1806" data-label="Text"> <p>[0067]: <i>“In one embodiment, the identifier is marked as a bar code that is scannable by image capturing devices. Additionally, the identifier may be a 2D bar code. In process 310, the item or package is marked with an identifier of the associated URL of the item or package.”</i></p> </div> <div data-bbox="527 1837 1425 1879" data-label="Text"> <p>[0089]: <i>“FIG. 6B illustrates an example of an alphanumeric</i></p> </div>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>representation of a product code/URL 604 encoded as a graphic symbol, according to one embodiment.”</i></p> <p>[0090]: <i>“Of course, it will be appreciated by those skilled in the art that in various alternative embodiments, product codes may be encoded with other graphic symbologies, for example, such as barcode fonts consistent with the PDF417 or QR Product code standards. In one embodiment, both versions of the product code 602 and 604 may be included on the product, label, or product packaging.”</i></p> <p>To one skilled in the art, the “reading” or “scanning” of a bar code symbol in the context of Self is synonymous with both detecting and decoding of the symbol of interest. Self teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.</p>
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the electronic device;	<p>Through at least the following examples, Self teaches that the symbology is decoded to obtain a decode string (e.g., an “alphanumeric representation” such as “product code 602” which “may be a string of sixteen alphanumeric characters”) using a visual detection application (e.g., “relevant software for QR code reading”) residing on the portable electronic device.</p> <p>Claim 12: <i>“The method of claim 5 wherein the bar code is scannable by an image capturing device.”</i></p> <p>Fig. 6B (above)</p> <p>[0003]: <i>“In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</i></p> <p>[0035-0036]: <i>“Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve</i></p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>the information in addition to providing authentication of the product.”</i></p> <p>[0044]: “[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</p> <p>[0056]: “The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</p> <p>[0088]: “FIG. 6A illustrates an example of an alphanumeric representation of a product code, according to one embodiment. In one embodiment, the product code may be a string of sixteen alphanumeric characters consisting of numbers and letters, such as the product code 602.”</p> <p>[0089]: “FIG. 6B illustrates an example of an alphanumeric representation of a product code/URL 604 encoded as a graphic symbol, according to one embodiment.”</p> <p>To one skilled in the art, the “reading” or “scanning” of a bar code symbol in the context of Self is synonymous with both detecting and decoding of the symbol of interest. Self teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.</p>
sending the decode string to a remote server for processing;	Through at least the following examples, Self teaches sending the decode string to a remote server (e.g., “server module 100”) for processing.

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<div data-bbox="557 277 1052 676"> <pre> graph TD 108((108)) --- 106[Consumer Device 106] 106 --- 110((Network 110)) 104[Distributor 104] --- 110 100[Server Module 100] --- 110 102[Client 102] --- 110 </pre> </div> <p data-bbox="776 703 857 735">FIG. 1</p> <p data-bbox="532 783 735 814">Fig. 3B (above)</p> <div data-bbox="548 865 1107 1339"> <pre> graph TD 322[Receive a Request for a Product Information Associated with a URL 322] --> 324[Associate the Received URL with the Product Information of the Item or Package 324] 324 --> 326[Verify Authenticity of the URL 326] 326 --> 328[Provide Authenticity Information of the URL 328] 328 --> 330[Process Information Associated with the Request Such as Identity of the Requestor, Location of the Request, Time of the Request 330] 330 --> 332[Providing at Least a Portion of Product Information Associated with at Least a Portion of the URL Based on Information Associated with the Request 332] </pre> </div> <p data-bbox="792 1346 898 1377">FIG. 3C</p> <p data-bbox="532 1430 1417 1608">[0003]: “In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</p> <p data-bbox="532 1650 1417 1717">[0013]: “FIG. 1 illustrates an example of a consumer device and/or a client communicating with a server module</p> <p data-bbox="532 1759 1417 1898">[0035-0036]: “Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the</p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product."</i></p> <p>[0044]: <i>"[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone."</i></p> <p>[0045]: <i>"FIG. 1 illustrates an example of a consumer device 106 and/or a client 102 communicating with a server module 100 to access product information coding and authentication services through a network 110, according to one embodiment."</i></p> <p>[0049] <i>"The network 110, over which the client 102, the consumer device 106 and the server module 100 communicate..."</i></p> <p>[0051]: <i>"...communicating a request to the server module 100..."</i></p> <p>[0055]: <i>"The consumer device 106 may be any device having networking capabilities (e.g., mobile phone, PDA, notebook, desktop computer, etc.) able to send a product code/URL that is to be authenticated through the network 110 to the server module 100."</i></p> <p>[0056]: <i>"The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed."</i></p> <p>[0074]: <i>"In process 322, the coding service provider receives a request for product information associated with a URL. In operation 324, the received URL is associated with the product information of the item or package. In operation 326, authenticity of the URL is verified."</i></p> <p>To one skilled in the art, discussions pertaining to the sending or transmission of information (data) implies that there HAS to be a</p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	remote (physically disparate) device (e.g. computer, server, website, etc.). Self teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.
receiving information about the digital image from the remote server wherein the information is based on the decode string;	<p>Through at least the following examples, Self teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., "the product information about the item or package associated with the URL").</p> <p>Fig. 1 (above), Fig. 3B (above), Fig. 3C (above)</p> <p>[0003]: <i>"The decoded URL can then be accessed by the camera phone through a network. Since use of camera phones has become widespread, information encoded with QR codes can be conveniently read by anyone carrying a cellular phone with a camera. This method is typically used to provide a link to a web page containing more information about an advertisement of a product or service in a magazine, newspaper, or other printed publication."</i></p> <p>[0013]: <i>"FIG. 1 illustrates an example of a consumer device and/or a client communicating with a server module to access product identification services using a URL ..."</i></p> <p>[0035-0036]: <i>"Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product."</i></p> <p>[0044]: <i>"[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone."</i></p> <p>[0051]: <i>"...communicating a request to the server module 100..."</i></p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p>[0055]: <i>"The consumer device 106 may be any device having networking capabilities (e.g., mobile phone, PDA, notebook, desktop computer, etc.) able to send a product code/URL that is to be authenticated through the network 110 to the server module 100."</i></p> <p>[0056]: <i>"The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed."</i></p> <p>[0072]: <i>"In operation 318, the product information about the item or package associated with the URL is received by the requester."</i></p> <p>[0075]: <i>"In operation 332, at least a portion of the product information associated with at least a portion of the URL is provided based on the information associated with the request."</i></p> <p>To one skilled in the art, Self teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Self teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the electronic device.	<p>Through at least the following examples, Self teaches that the portable electronic device displays the received information on a display device (e.g., "displayed on the verification screen") associated with the portable electronic device.</p> <p>[0035-0036]: <i>"Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded</i></p>

'190 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</i></p> <p>[0044]: <i>“[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</i></p> <p>[0056]: <i>“The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</i></p> <p>[0057]: <i>“In addition to communicating authentication results to the consumer device 106, alternate information revealed during the decryption process, such as product information, expiration date, manufacturing location, may also be communicated to the consumer device 106 and displayed accordingly.”</i></p> <p>[0058]: <i>“Furthermore, product information including the brand, type of product, UPC code is also determined and displayed on the verification screen. In one embodiment, a product image is also displayed.”</i></p> <p>Self teaches that the portable electronic device is able to display the received information. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.</p>

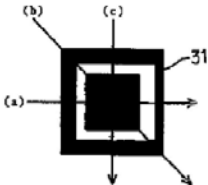
EXHIBIT N – ‘369 PATENT

Japanese patent 2002-118680 teaches use of a mobile electronic device as a means for capturing 2D matrix bar code symbols (e.g. QR Codes) for decoding and as a means to obtain information from a remote computer server (e.g. web site) for display on the mobile electronic device. It is my opinion that Ekusa anticipates Claim 1 of the ‘369 patent.

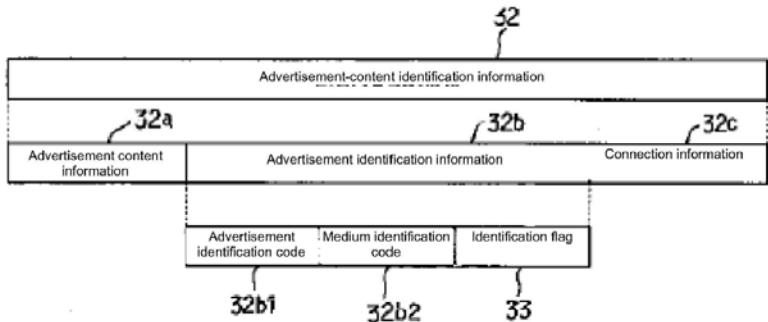
'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
A method comprising:	<p>Ekusa teaches a method through at least the following examples.</p> <p>FIG. 7</p> <pre> graph TD START([START]) --> S101[Activation of OFF timer S101] S101 --> S102{Has the time run out?} S102 -- YES --> S108[END processing S108] S102 -- NO --> S103{END operation performed?} S103 -- YES --> S108 S103 -- NO --> S104{Connection operation performed?} S104 -- YES --> S110[Display the method of connecting to the information center on the screen S110] S104 -- NO --> S105{Readout operation performed?} S105 -- YES --> S109[Read out the deciphered data of the stored QR code and display it on the screen S109] S105 -- NO --> S106{Scanning operation performed?} S106 -- YES --> S107[Code scan processing S107] S106 -- NO --> S102 S107 --> S111[Connect to the information center through the use of the connection information of the advertisement displayed on the screen S111] S111 --> S112[Receive information, which prompts the transmission of the advertisement identification code and medium identification code, from the information center. S112] S112 --> S113[Transmit the advertisement identification code and medium identification code to the information center. S113] S113 --> S114[Receive detailed information applicable to the advertisement identification code from the information center. S114] S114 --> S115[Display the detailed information thus received. S115] S115 --> S102 </pre>

<p>'369 Patent</p>	<p>Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002</p>
	<p>FIG. 8</p> <p>Code Scan Processing</p> <pre> graph TD START([START]) --> S201[S201: Input image data] S201 --> S202[S202: Create binary image data] S202 --> S203[S203: Search for code characteristic pattern] S203 --> S204{S204: Is there a characteristic pattern?} S204 -- NO --> S213[S213: Indication that it is not an advertisement code] S204 -- YES --> S205[S205: Check the peripheral position of the code and determine the code region] S205 --> S206[S206: Determine light or dark of each data cell] S206 --> S207[S207: Convert all data cell into data bit string] S207 --> S208[S208: Check errors in the data bit string and correct errors, if any] S208 --> S209[S209: Convert the data bit string into a character code] S209 --> S210{S210: Is there an identification flag?} S210 -- NO --> S213 S210 -- YES --> 211[211: Classify the data: * n characters before the identification flag -> information on the ad content * n characters before the identification flag -> ad information code * n characters before the identification flag -> medium information code * n characters before the identification flag -> connection information] 211 --> S212[S212: Display the advertisement content information] S212 --> END([END]) S213 --> END </pre> <p>As can be seen in the preceding examples, Ekusa teaches a method. And to the extent that the words “A method comprising...” are not explicitly used, one skilled in the art would immediately understand that a method of usage is being taught.</p>
<p>capturing a digital image using a digital image capturing device that</p>	<p>Through at least the following examples, Ekusa teaches that a digital image may be captured using a digital image capturing device (e.g., “imaging part 18”) that is part of a portable electronic device (e.g.,</p>

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>[0025]: <i>"Meanwhile, when the user wants to use the portable telephone 7 to scan a QR code 4, he or she operates the shutter key in the key operation part 14, doing so in the state where the QR-code scan mode is selected and set. In this case, once the imaging part 18 captures the QR code 4"</i></p> <p>[0049]: <i>"...Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4,..."</i></p> <p>To one skilled in the art, the scanning of a symbol in the context of Ekusa is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Ekusa teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with the digital image using a portable electronic device;	<p>Through at least the following examples, Ekusa teaches that a symbology (e.g., "QR code 4") associated with an object (e.g., "advertising media 6") within the digital image is detected using the portable electronic device.</p> <p><i>Claim 1:</i> <i>"A decoding means for deciphering the two dimensional code captured by said imaging means and converting it into data"</i></p> <p>[0006]: <i>"According to the invention of Claim 1, once an imaging means has captured a two-dimensional code, a decoding means decipheres the two-dimensional code captured by the imaging means..."</i></p> <p>[0013]: <i>"The advertisement client 1 requests ... that the advertiser 5 print the QR code ... onto advertising media 6 such as posters, wall banners or community magazines, etc."</i></p> <p>[0014]: <i>"A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function for scanning and thus reading the QR code 4..."</i></p> <p>[0024]: <i>"...When it captures a QR code 4, which contains coded information, it can decode the QR code 4 and thereby convert the</i></p>

‘369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>code into textual information.”</i></p> <p>[0025]: “...In this case, once the imaging part 18 captures the QR code 4, the image data of the captured QR code 4 is provided to the CPU 23. The CPU 23, when provided with a QR code 4, decodes the QR code 4...”</p> <p>[0027]: “Figure 5 shows a positioning symbol. In said Figure 5, the positioning symbol 31 is configured so that contrast (dark/light) component ratio of the pattern passing through the center of the positioning symbol 31 (as represented by the patterns (a), (b) and (c) in Figure 4) would be dark:light:dark:light:dark = 1:1:3:1:1. Thus, the CPU 23 obtains the ratio of the length of continuous light (1) and the length of continuous dark (0) in a QR image, thereby detecting a pattern applicable to the positioning symbol 31 of the QR code 4 based on said ratio of the lengths. It also executes code processing and can thereby determine whether the QR code 4 is present in the image based on whether three positioning symbols are present at appropriate positions.”</p> <p>FIG. 5</p>  <p>[0034]: “Now, in order for the user to operate the imaging part 18 of the portable telephone 7 so as to scan a QR code 4, ... Here, the CPU 23 of the portable telephone 7 executes code scan processing when the scanning operation is performed (S107).”</p> <p>[0035]: “Figure 8 shows the code scan processing by the CPU 23. In said Figure 8, the CPU 23 inputs image data first (S201) and then creates binary image data (S202). Subsequently, it searches for the presence of a positioning symbol's characteristic pattern in the binary image data (S203).”</p> <p>[0049]: “... Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4...”</p> <p>To one skilled in the art, “reading” of a bar code symbol is synonymous with both detecting and decoding of the symbol of</p>

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	interest. Eksua teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the portable electronic device;	<p>Through at least the following examples, Ekusa teaches that the symbology is decoded to obtain a decode string (e.g., "textual information" such as "advertisement identification information 32b") using a visual detection application (e.g., "a program stored in ROM 24") residing on the portable electronic device .</p> <p><i>Claim 1:</i> <i>"A decoding means for deciphering the two dimensional code captured by said imaging means and converting it into data"</i></p> <p>[0006]: <i>"According to the invention of Claim 1, once an imaging means has captured a two-dimensional code, a decoding means deciphers the two-dimensional code captured by the imaging means and transforms it into data. ..."</i></p> <p>[0014]: <i>"A portable telephone 7 (which serves as the portable communication terminal device used by the user, who subscribes to the informational service) is provided with a scanning function for scanning and thus reading the QR code"</i></p> <p>[0020]: <i>"Additionally, the portable telephone 7 is primarily comprised of a CPU (which corresponds to the decoding means..."</i></p> <p>[0024]: <i>"...When it captures a QR code 4, which contains coded information, it can decode the QR code 4 and thereby convert the code into textual information."</i></p> <p>[0025]: <i>"...In this case, once the imaging part 18 captures the QR code 4, the image data of the captured QR code 4 is provided to the CPU 23. The CPU 23, when provided with a QR code 4, decodes the QR code 4..."</i></p> <p>[0028]: <i>"Then, it executes decoding based on the type of each cell and thus obtains information represented by the two-dimensional information code."</i></p> <p>[0029] <i>"Figure 6 shows information recorded on the QR code 4. In said Figure 6, the advertisement-content identification information</i></p>

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002												
	<p>32, which is used to identify advertisement information (which corresponds to connection information), is stored in the QR code 4. The advertisement-content identification information 32 concerned consists of advertisement content information 32a, advertisement identification information 32b and connection information 32c.”</p> <p>FIG. 6</p>  <p>[0036]: “Meanwhile, when binary image data has a characteristic pattern (S204: YES), the CPU 23 checks the peripheral position of the code determined based on the positioning symbols, it determines the code region (S205). Subsequently, it obtains the positions of the data cells situated in the code region based on the positioning symbols and determines the light or dark of each data cell (S206). Subsequently, it converts each data cell into a data bit string (S207) while checking for errors in the data bit string and correcting errors, if any (S208), and then converts the data bit string into a character code (S209).”</p> <p>Fig. 9:</p> <table border="1" data-bbox="540 1327 1343 1463"><thead><tr><th>Ad content</th><th>Connection info</th><th>Ad identification code</th><th>Medium identification code</th></tr></thead><tbody><tr><td>Digital navigation system</td><td>http://www.DENSO.co.jp</td><td>aaaaaaaaa</td><td>bbbbbbbbb</td></tr><tr><td>OXOX Moving Center</td><td>012-123-4567</td><td>ggggggggggg</td><td>hhhhhhhhh</td></tr></tbody></table> <p>[0049]: “According to such an embodiment, a QR code 4, which indicates advertisement identification information (including connection information), is printed on the advertising media 6. Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes...”</p> <p>To one skilled in the art, “reading” of a bar code symbol is synonymous with both detecting and decoding of the symbol of interest. Furthermore, to one skilled in the art, the conversion of</p>	Ad content	Connection info	Ad identification code	Medium identification code	Digital navigation system	http://www.DENSO.co.jp	aaaaaaaaa	bbbbbbbbb	OXOX Moving Center	012-123-4567	ggggggggggg	hhhhhhhhh
Ad content	Connection info	Ad identification code	Medium identification code										
Digital navigation system	http://www.DENSO.co.jp	aaaaaaaaa	bbbbbbbbb										
OXOX Moving Center	012-123-4567	ggggggggggg	hhhhhhhhh										

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	dark and light data cells within a QR Code is the technical means by which a 2D matrix symbol is decoded. Eksua teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.
sending the decode string to a remote server for processing;	<p>Through at least the following examples, Ekusa teaches sending the decode string to a remote server (e.g., "WWW server 3") for processing.</p> <p><i>Claim 4:</i> <i>"The portable communication terminal device according to any one of the claims 1 through 4, characterized by comprising an automatic transmission means for automatically transmitting given data (other than the connection destination data) to the connection destination's device concerned, doing so when said connection means connects to the connection destination's device according to the connection destination data."</i></p> <p>[0015]: <i>"The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time."</i></p> <p>[0040]: <i>"In this case, the assumption is that the connection method thus displayed instructs connection to the website's URL, which is set up in the WWW server 3 of the information center 2. Connection to the URL is automatically established when the connection method is set in the automatic connection mode. Stated another way, the WWW browser is activated automatically, whereby it accesses the website on the WWW server 3 of the information center 2 via a mobile phone network and the Internet..."</i></p> <p>[0042] <i>"When accessed by the portable telephone 7, the WWW server 3 of the information center 2 transmits information, which prompts the transmission of an advertisement identification code and a medium identification code. Accordingly, when the CPU 23 of the portable telephone 7 receives such information (S112), it transmits the advertisement identification code and the medium identification code, which are stored therein, to the WWW server 3</i></p>

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>(S113).”</p> <p>[0043] “Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code.”</p> <p>[0049]: “...Once the user has seen the advertisement and scanned the QR code 4 with a portable telephone 7 having a function that can scan and thus read QR codes 4, the advertisement identification information indicated by the QR code will be stored in the portable telephone 7. Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology.”</p> <p>To one skilled in the art, the term “decode string” is synonymous with the term “decoded data” or “symbolology data.” Additionally, the term “sending the decode string” is synonymous with the terms “transmitting”, “transmitting the data”, “transmitting the symbolology data” and “transmitting the decoded data.” Finally, to one skilled in the art, discussions pertaining to transmission of information (data) implicitly implies that there HAS to be a remote (physically disparate) device (e.g. computer, server, website, etc.). Ekusa teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.</p>
receiving information about the digital image from the remote server wherein the information is based on the decode string;	<p>Through at least the following examples, Ekusa teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., “detailed information applicable to the advertisement identification code”).</p> <p><i>Abstract:</i></p> <p>“When the user sees the advertisement and wants to obtain information on the advertisement, he or she captures the QR code 4 with a portable telephone 7 provided with a photographic function.</p>

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>The portable telephone 7 accesses the information center 2 according to the connection information indicated by the QR code 4, thus allowing the user to easily access the information center 2..."</i></p> <p>Fig. 1 (above); Fig. 7 (above); Fig. 8 (above) and associated text.</p> <p>[0015]: <i>"The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time."</i></p> <p>[0031]: <i>"As software used to connect to the Internet, for example, a WWW browser is stored in the ROM 24 of the portable telephone 7. By activating said WWW browser, it becomes possible to access the website provided on the WWW server, which is connected to the Internet, from the portable telephone 7 in order to download data containing necessary data, or to access a database provided on the WWW server in order to write data."</i></p> <p>[0038]: <i>"In this case, the connection information is either a website address on the WWW server 3 of the information center 2 In the case of access through connection to the website, one can download"</i></p> <p>[0040]: <i>"In this case, the assumption is that the connection method thus displayed instructs connection to the website's URL, which is set up in the WWW server 3 of the information center 2. Connection to the URL is automatically established when the connection method is set in the automatic connection mode. Stated another way, the WWW browser is activated automatically, whereby it accesses the website on the WWW server 3 of the information center 2 via a mobile phone network and the Internet. In response to said access, information (contents data) on the product or service such as images, text, audio, etc., can be downloaded into the portable telephone 7 from the website on the WWW server 3 of the information center 2 ..."</i></p> <p>[0043] <i>"Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code. Accordingly, once the CPU 23 of the portable</i></p>

'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p><i>telephone 7 receives the detailed information applicable to the advertisement identification code (S114), it displays the received detailed information on the display part 16 (S115). Thus, the user can view detailed information regarding the advertisement or service."</i></p> <p><i>[0049]: "...Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology."</i></p> <p>Ekusa teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Ekusa teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the portable electronic device.	<p>Through at least the following examples, Ekusa teaches that the portable electronic device displays the received information on a display device (e.g., "display part 16") associated with the portable electronic device.</p> <p>Fig. 1 (above); Fig. 7 (above); Fig. 8 (above) and associated text.</p> <p><i>[0012]: "Said advertisement-content identification information contains information used to identify the advertisement, data used to display the content of the advertisement, and connection information used for connection to the information center."</i></p> <p><i>[0014] "Because information on the product or service is stored in said QR code 4, the user may cause the information on the product or service (which is stored in the portable telephone 7) to be displayed on the portable telephone 7 itself, a PDA (Personal Digital Assistant) 8 or a car navigation system 9 that is connected to the portable telephone 7, thereby making it possible to obtain the information on the product or service at any time."</i></p>

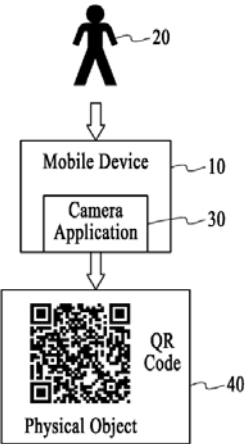
'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	<p>[0015]: <i>"The information center 2, when accessed by the user through the portable telephone 7, transmits the detailed information on the product or service (which has been registered by the advertisement client 1) to the portable telephone 7. This makes it possible for the user to obtain detailed information on the product or service at any time."</i></p> <p>[0018]: <i>"Figure 3 shows the portable telephone 7. In said Figure 3, the front surface of the housing 13 of the portable telephone 7 comprises a key operation part 14 consisting of multiple operation keys, a microphone 15, a display part 16 comprising an LCD"</i></p> <p>[0038]: <i>"In this case, the connection information is either a website address on the WWW server 3 of the information center 2 In the case of access through connection to the website, one can download the content and thereby view detailed information on the product or service."</i></p> <p>[0040]: <i>"In response to said access, information (contents data) on the product or service such as images, text, audio, etc., can be downloaded into the portable telephone 7 from the website on the WWW server 3 of the information center 2 and then displayed on the display part 16."</i></p> <p>[0043] <i>"Once the WWW server 3 of the information center 2 receives the advertisement identification code and the medium identification code from the portable telephone 7, it stores the codes and transmits detailed information applicable to the advertisement identification code. Accordingly, once the CPU 23 of the portable telephone 7 receives the detailed information applicable to the advertisement identification code (S114), it displays the received detailed information on the display part 16 (S115). Thus, the user can view detailed information regarding the advertisement or service."</i></p> <p>[0049]: <i>"... Thus, the information center 2 (which is the connection destination) can be accessed in accordance with the user's operation, doing so through the connection topology specified by the connection information included in the advertisement identification information (which is stored in the portable telephone 7). Accordingly, the user can access the information center 2 and obtain information on the advertisement, doing so without worrying about the connection topology."</i></p>

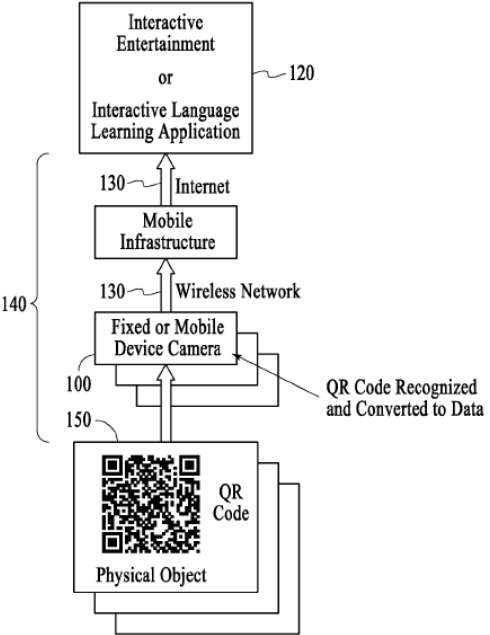
'369 Patent	Japanese Patent 2002-118680 (Ekusa et al.) Published April 19, 2002
	Ekusa teaches that the portable electronic device is able to display the received information. And to the extent that Ekusa doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.

EXHIBIT O – ‘369 PATENT

US Patent Application 2009/0108057 teaches the use of QR Codes that scanned by mobile devices as a means of providing interactive experiences that have been retrieved from remote servers on the mobile device. It is my opinion that Mu anticipates Claim 1 of the ‘369 patent.

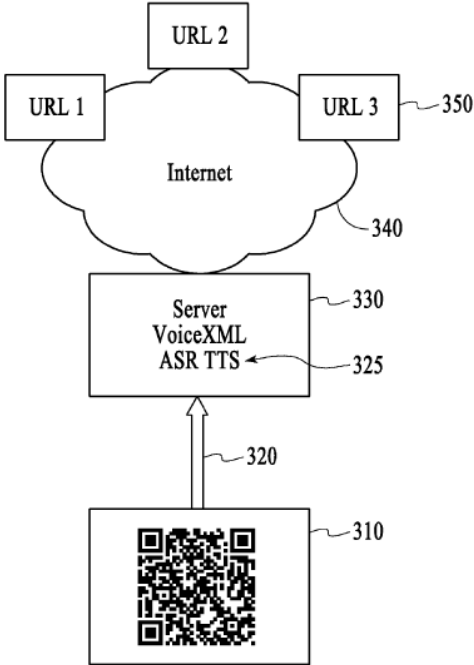
‘369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
A method comprising:	<p>Mu teaches a method through at least the following examples</p> <p><i>Abstract: “Systems and methods are described that include using quick response (QR) codes with mobile devices for providing interactive applications and services to a user via the mobile devices...”</i></p> <p><i>Claim 1: “1. A method comprising:...”</i></p> <p><i>[0014]: “Methods and systems are described below for using QR codes on or in physical objects to launch interactive learning sessions when scanned with a client device having an optical sensing device or camera.”</i></p> <p>As can be seen in the preceding examples, Mu teaches a method.</p>
capturing a digital image using a digital image capturing device that is part of a portable electronic device;	<p>Through at least the following examples, Mu teaches that a digital image may be captured using a digital image capturing device (e.g., “optical sensing device or camera”) that is part of a portable electronic device.</p> <p><i>Claim 10: “scanning a quick response (QR) code using a component of a mobile device...”</i></p> <p><i>Claim 11: “...a client device including a scanner...”</i></p> <p>Fig 1.</p>

'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	 <p>The diagram shows a user (20) interacting with a mobile device (10). The mobile device contains a camera application (30). The camera application is used to scan a QR code (40) located on a physical object. Arrows indicate the flow of interaction: from the user to the mobile device, from the camera application to the QR code, and from the QR code back to the mobile device.</p> <p>[0014]: “Methods and systems are described below for using QR codes on or in physical objects to launch interactive learning sessions when scanned with a client device having an optical sensing device or camera.”</p> <p>[0021]: “FIG. 1 shows a client device configured to scan a QR code, under an embodiment. The client device 10 is operated by a user 20 and includes and processes all applications corresponding to QR code recognition activities. These applications include a camera application 30 for scanning the QR Code from a physical object 40, but the applications are not so limited.”</p> <p>[0040]: “The systems and methods described herein include a method for using QR codes with mobile devices for education and training services. The method of an embodiment uses an optical device or component hosted on or in a client device (e.g., mobile device) to scan the QR code of a card, portion of a book, portion of a magazine, portion of a newspaper, physical object, and/or display screen or device...”</p> <p>To one skilled in the art, the scanning of a symbol in the context of Mu is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Mu teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Mu doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with the	Through at least the following examples, Mu teaches that symbology (e.g., “QR code”) associated with an object (e.g.,

<p>‘369 Patent</p>	<p>U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009</p>
<p>digital image using a portable electronic device;</p>	<p>“Physical Object 40” as shown in Figs. 1 and 2, such as “games, toys or just about any object about which a user might want information”) within the digital image is detected using the portable electronic device.</p> <p>Fig 2.</p>  <p>Claim 6: <i>“The method of Claim 1, comprising generating the data of the QR code by decoding the QR code at the mobile device”</i></p> <p>Claim 12: <i>“The system of Claim 11, wherein the mobile device decodes the QR code.”</i></p> <p>[0018]: <i>“QR codes storing addresses and URLs may appear in books, on object packaging, games, toys or just about any object about which a user might want information.”</i></p> <p>[0019]: <i>“Typically, the client will be configured to decode the QR code locally”</i></p> <p>[0022] <i>“In an embodiment, QR code recognition processing is performed via a client device...”</i></p> <p>[0023] <i>“...These downloaded applications are subsequently run on the client 100 during the execution of the QR code recognition exercises.”</i></p>

'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for processing...The client decoder 220 sends the QR code data..."</i></p> <p>To one skilled in the art, "reading" of a bar code symbol in the context of Mu is synonymous with both detecting and decoding of the symbol of interest. Furthermore, it is understood by one skilled in the art that if a bar code symbol is decoded it MUST first be detected. Mu teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.</p>
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the portable electronic device;	<p>Through at least the following examples, Mu teaches that the symbology is decoded to obtain a decode string (e.g., "decoded QR code data") using a visual detection application (e.g., "reader software" or "QR code recognition program" such as "a camera application 30 for scanning the QR Code from a physical object 40") residing on the portable electronic device.</p> <p>Claim 1: <i>"...receiving data of a quick response (QR) code at a mobile device, the data of the QR code received from a scan of the QR code;"</i></p> <p>Claim 6: <i>"The method of Claim 1, comprising generating the data of the QR code by decoding the QR code at the mobile device"</i></p> <p>Claim 10: <i>"...decoding the QR code"</i></p> <p>Claim 12: <i>"The system of Claim 11, wherein the mobile device decodes the QR code."</i></p> <p>Fig. 1 (above); Fig. 2 (above); Fig. 3 (above) and associated text.</p> <p>[0018]: <i>"Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.)..."</i></p> <p>[0019]: <i>"Typically, the client will be configured to decode the QR code locally rather than transferring the QR code to the server for interpretation..."</i></p> <p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for</i></p>

'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>processing...The client decoder 220 sends the QR code data..."</i></p> <p>[0035]: <i>"In an alternative embodiment, the QR code is decoded by or within the client and the resulting URL is used by the client to make a connection."</i></p> <p>To one skilled in the art, "reading" of a bar code symbol in the context of Mu is synonymous with both detecting and decoding of the symbol of interest. Furthermore, to one skilled in the art, the conversion of dark and light data cells within a QR Code is the technical means by which a 2D matrix symbol is decoded. Mu teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.</p>
sending the decode string to a remote server for processing;	<p>Through at least the following examples, Mu teaches sending the decode string to a remote server (e.g., "server 120") for processing.</p> <p>Fig. 2 (above); Fig. 3 (above); Fig 5. (above) and associated text.</p> <p>[0018]: <i>"Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.). The client can also be configured to receive data from a remote device in response to the transmitted QR code data. For example, the client can transmit the QR code data and speech data to a remote server or specified uniform resource locator (URL)..."</i></p> <p>[0019]: <i>"Typically, the client will be configured to decode the QR code locally rather than transferring the QR code to the server for interpretation, but the client is not so limited. A user having a client device with a scanner, for example a camera telephone phone equipped with a reader and reader software can scan and decode the image of the QR code causing the phone's browser to launch and redirect to the programmed URL."</i></p> <p>[0028]: <i>"FIG. 3 shows transmission of QR code data to a server for processing in interactive entertainment or interactive language learning applications, under an embodiment..."</i></p> <p>[0026]: <i>"In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via</i></p>

<p>‘369 Patent</p>	<p>U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009</p>
	<p><i>their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function...</i></p> <p>Fig 4.</p>  <p>[0033]: “FIG. 4 shows connection to URLs via a decoded QR code in interactive entertainment or interactive language learning applications, under an embodiment. A QR code received by a client device is decoded 320 and transferred to a server where it is processed or analyzed...”</p> <p>[0040]: “...The method of an embodiment transfers or transmits the decoded QR code data from the mobile device to a URL as determined from the QR code data...”</p> <p>[0036]: “FIG. 5 is a flow diagram for a multimedia object playback thread, under an embodiment. Operation begins when the decoded QR code information is provided to or received at the server...”</p> <p>To one skilled in the art, the term “decode string” in the context of Mu is synonymous with the term “decoded data” or “symbology data.” Additionally, the term “sending the decode string” is synonymous with the terms “transmitting”, “transmitting the data”, “transmitting the symbology data” and “transmitting the decoded data.” Finally, to one skilled in the art, discussions pertaining to transmission of information (data) implicitly implies that there HAS</p>

'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	to be a remote (physically disparate) device (e.g. computer, server, website, etc.). Mu teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.
receiving information about the digital image from the remote server wherein the information is based on the decode string;	<p>Through at least the following examples, Mu teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., "A selected multimedia object corresponding to the QR code").</p> <p>Abstract: "...A selected multimedia object corresponding to the QR code is retrieved from the URL or a database. The selected multimedia object is transferred to the mobile device for playback."</p> <p>Claim 1: "...selecting a multimedia object corresponding to the data of the QR code and retrieving the multimedia object via one of the URL and a database;"</p> <p>Claim 7: "...transmitting the multimedia object to the mobile device using at least one transmission packet, wherein the at least one transmission packet of the multimedia object is transmitted to the mobile device via a mobile internet connection."</p> <p>Claim 11: "...a server coupled to the client device via a network, the server receiving the QR code from the client device, the server identifying and retrieving a multimedia object corresponding to the QR code, and the server transmitting the multimedia object to the mobile device."</p> <p>Claim 15: "The system of Claim 11, wherein the mobile device receives the multimedia object and presents the multimedia object to a user via at least one of a display and an audio device."</p> <p>[0018]: "Each client of an embodiment is configured to transfer or transmit the scanned or received data (e.g., decoded QR code data, audio data, etc.). The client can also be configured to receive data from a remote device in response to the transmitted QR code data. For example, the client can transmit the QR code data and speech data to a remote server or specified uniform resource locator (URL), which then returns back a multimedia object or menu of additional choices. QR codes storing addresses and URLs may</p>

'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>appear in books, on object packaging, games, toys or just about any object about which a user might want information."</i></p> <p>[0026]: <i>"In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function... The QR code function of an embodiment also includes use of the URL from the decoded QR code to return a multimedia object or web page to the client. The proper XML file is returned to the client from the server, via the Internet or wireless network, and the client's browser displays the text, graphics and multimedia data of the file on the client's screen. The user may then perform various entertainment or language learning exercises at the direction of the displayed web page."</i></p> <p>[0029]: <i>"In response to transmission of the QR code by the client, the client receives an XML file 250 comprising a web page from the server for use in an entertainment or language learning activity, and the client device 210 displays the text, graphics and multimedia data of the file to the user 200. When the user thereafter selects an exercise via the displayed web page"</i></p> <p>Fig. 3 (above), Fig. 5 (above), and associated text.</p> <p>[0040]: <i>"The systems and methods described herein include a method for using QR codes with mobile devices for education and training services. The method of an embodiment uses an optical device or component hosted on or in a client device (e.g., mobile device) to scan the QR code of a card, portion of a book, portion of a magazine, portion of a newspaper, physical object, and/or display screen or device. The method of an embodiment decodes the QR code in the mobile device. The method of an embodiment transfers or transmits the decoded QR code data from the mobile device to a URL as determined from the QR code data. The method of an embodiment catalogs the QR code data. The method of an embodiment associates the decoded QR code to a multimedia object in a database. The method of an embodiment retrieves the corresponding multimedia object from the database. The method of an embodiment transfers the corresponding multimedia object retrieved or read from the database to the mobile device for playback. The method of an embodiment can also transfers the corresponding multimedia object retrieved or read from the database to another device for playback or input into another software program or service."</i></p>

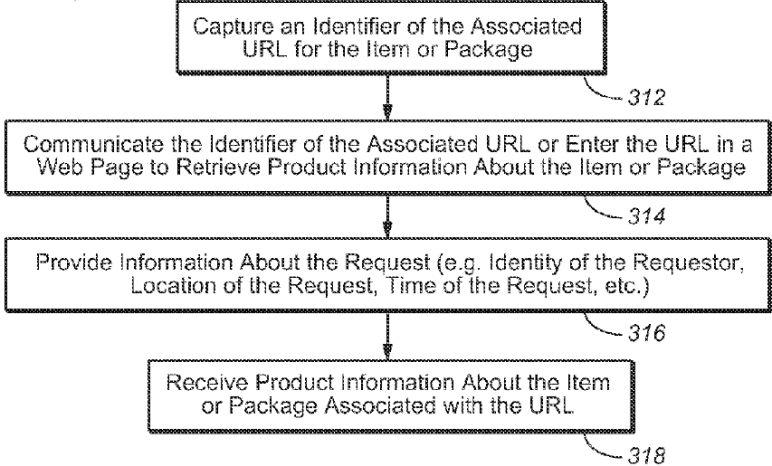
'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p>[0036]: <i>“FIG. 5 is a flow diagram for a multimedia object playback thread, under an embodiment. Operation begins when the decoded QR code information is provided to or received at the server. The server determines if the received information is in the master index. If the received QR code information is not in the master index, the item is cataloged and quarantined for subsequent action. If the QR code information is identified in the master index, the audiovisual object is retrieved by the server, which then determines if a format conversion is necessary, performs such a conversion if needed, and then delivers the audiovisual object to the device for presentation.”</i></p> <p>Mu teaches that information can be received about an object from a remote server that contains the desired information for which the decoded data pertains. Furthermore, Mu teaches that a QR Code can be used as the key for receiving the desired information. It can be additionally anticipated from this that the user WANTS the information to be received by the portable device by virtue of their capturing the image and causing it to be decoded. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that</p>
displaying the information on a display device associated with the portable electronic device.	<p>Through at least the following examples, Mu teaches that the portable electronic device displays the received information on a display device (e.g., “the client's screen”) associated with the portable electronic device.</p> <p>Abstract: <i>“...The selected multimedia object is transferred to the mobile device for playback.”</i></p> <p>Claim 2: <i>“The method of Claim 1, comprising receiving the multimedia object at the mobile device and presenting the multimedia object to a user via at least one of a display and an audio device of the mobile device.”</i></p> <p>Claim 10: <i>“...transmitting the multimedia object to at least one of the mobile device for playback and a remote device for at least one of playback, input into an application, and input into a service.</i></p> <p>[0026]: <i>“In an embodiment of a QR code recognition activity for interactive entertainment or language learning, a user requests, via their client, an XML (eXtensible Markup Language) file comprising a web page for use in a QR code function. The QR code function of an embodiment includes a QR code processing exercise from the server supporting QR code recognition. The QR code function of an</i></p>

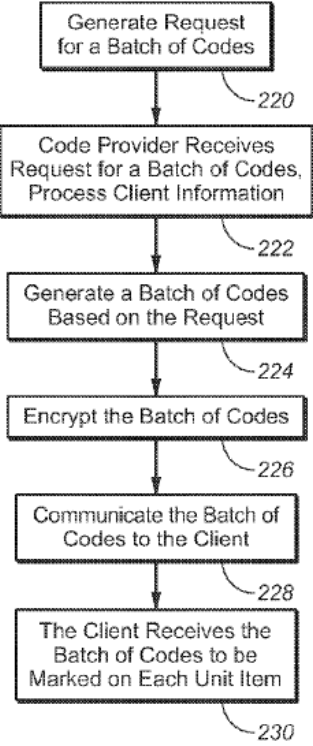
'369 Patent	U.S. Patent Application Publication 2009/0108057 (Mu et al.) Published April 30, 2009
	<p><i>embodiment also includes use of the URL from the decoded QR code to return a multimedia object or web page to the client. The proper XML file is returned to the client from the server, via the Internet or wireless network, and the client's browser displays the text, graphics and multimedia data of the file on the client's screen. The user may then perform various entertainment or language learning exercises at the direction of the displayed web page."</i></p> <p>[0029]: <i>"In response to transmission of the QR code by the client, the client receives an XML file 250 comprising a web page from the server for use in an entertainment or language learning activity, and the client device 210 displays the text, graphics and multimedia data of the file to the user 200. When the user thereafter selects an exercise via the displayed web page, a script associated with the selected exercise activates a browser component."</i></p> <p>[0030]: <i>"In an embodiment, a text response is returned to the client from the server, which is displayed on a portion of the screen already displaying the current web page for the activity accessed by the user. In an alternative embodiment, an entirely new XML page 250 is returned from the server 240, which is displayed as a new web page to the user, via the client screen on the mobile device 210."</i></p> <p>[0048]: <i>"The method of an embodiment comprises receiving the multimedia object at the mobile device and presenting the multimedia object to a user via at least one of a display and an audio device of the mobile device."</i></p> <p>Mu teaches that the portable electronic device is able to display the received information. And to the extent that Mu doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.</p>

EXHIBIT S – ‘369 PATENT

US Patent Application 2007/0215685 A1 teaches use of a mobile electronic device as a means for capturing 2D matrix bar code symbols (e.g. QR Codes) for decoding and as a means to obtain information from a remote computer server (e.g. web site) for display on the mobile electronic device. It is my opinion that Self (et al.) anticipates Claim 1 of the ‘369 patent.

‘369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
A method comprising:	<p>Self teaches a method through at least the following examples.</p> <p>Claim 1: “<i>A method comprising:</i>”</p> <p>[0008]: “<i>Methods and systems for product identification using a URL...</i>”</p> <p>[0017-0018]: “<i>FIG. 3B is a flow chart describing an overview of an example process of product information request with an associated URL, according to one embodiment. FIG. 3C is a flow chart describing an overview of an example process of providing product information in response to receiving a request for product information with a URL, according to one embodiment.</i>”</p> <p>As can be seen in the preceding examples, Self teaches a method. And to the extent that the words “A method comprising...” are not explicitly used, one skilled in the art would immediately understand that a method of usage is being taught.</p>
capturing a digital image using a digital image capturing device that is part of a portable electronic device;	<p>Through at least the following examples, Self teaches that a digital image may be captured using a digital image capturing device (e.g., “an image capturing device such as a digital camera”) that is part of a portable electronic device (e.g., “camera phone”).</p> <p>Claim 12: “<i>The method of claim 5 wherein the bar code is scannable by an image capturing device.</i>”</p> <p>Claim 13: “<i>The method of claim 6 wherein the image capturing device is an electronic device that is at least one of a mobile phone, a digital camera, a laptop computer, a PDA, a desktop computer, a scanner, or a camera.</i>”</p>

'369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p data-bbox="548 279 646 321">300B</p>  <pre> graph TD 312[Capture an Identifier of the Associated URL for the Item or Package] --> 314[Communicate the Identifier of the Associated URL or Enter the URL in a Web Page to Retrieve Product Information About the Item or Package] 314 --> 316[Provide Information About the Request (e.g. Identity of the Requestor, Location of the Request, Time of the Request, etc.)] 316 --> 318[Receive Product Information About the Item or Package Associated with the URL] </pre> <p data-bbox="878 793 1040 835">FIG. 3B</p> <p data-bbox="532 877 1414 1056">[0003]: “In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</p> <p data-bbox="532 1098 1414 1381">[0035-0036]: “Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</p> <p data-bbox="532 1423 1414 1528">[0044]: “the product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</p> <p data-bbox="532 1570 1414 1791">[0056]: “The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</p> <p data-bbox="532 1833 1414 1894">[0069]: “[T]he identifier is automatically captured with an image capturing device such as a digital camera, a camera, digital</p>

‘369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>cameras built into portable devices (e.g., cell phones, PDAs, laptop computers etc), or a scanner.”</i></p> <p>To one skilled in the art, the scanning of a symbol with a camera in the context of Self is synonymous to taking a picture (or capturing an image of) the symbol of interest. As can be seen in the preceding examples, Self teaches the capturing of an image with the use of a portable electronic (digital) device with an imaging device (camera). And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device needs to have a digital image capturing (camera) device.</p>
detecting symbology associated with the digital image using a portable electronic device;	<p>Through at least the following examples, Self teaches that a symbology (e.g., “QR code”) associated with an object (e.g., “to be marked on each unit item”) within the digital image is detected using the portable electronic device.</p> <p>Claim 12: “<i>The method of claim 5 wherein the bar code is scannable by an image capturing device.</i>”</p>  <pre> graph TD 220[Generate Request for a Batch of Codes] --> 222[Code Provider Receives Request for a Batch of Codes, Process Client Information] 222 --> 224[Generate a Batch of Codes Based on the Request] 224 --> 226[Encrypt the Batch of Codes] 226 --> 228[Communicate the Batch of Codes to the Client] 228 --> 230[The Client Receives the Batch of Codes to be Marked on Each Unit Item] </pre> <p style="text-align: center;">FIG. 2A</p>

'369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<div data-bbox="568 302 794 470" data-label="Image"> </div> <div data-bbox="634 499 792 541" data-label="Caption"> <p>FIG. 6B</p> </div> <p data-bbox="532 600 1414 779">[0003]: <i>“In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</i></p> <p data-bbox="532 821 1414 1108">[0035-0036]: <i>“Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</i></p> <p data-bbox="532 1150 1414 1255">[0044]: <i>“[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</i></p> <p data-bbox="532 1297 1414 1514">[0056]: <i>“The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</i></p> <p data-bbox="532 1556 1414 1587">[0060]: <i>“...to be marked on each unit item...”</i></p> <p data-bbox="532 1629 1414 1808">[0067]: <i>“In one embodiment, the identifier is marked as a bar code that is scannable by image capturing devices. Additionally, the identifier may be a 2D bar code. In process 310, the item or package is marked with an identifier of the associated URL of the item or package.”</i></p> <p data-bbox="532 1850 1414 1875">[0089]: <i>“FIG. 6B illustrates an example of an alphanumeric</i></p>

'369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>representation of a product code/URL 604 encoded as a graphic symbol, according to one embodiment.”</i></p> <p>[0090]: <i>“Of course, it will be appreciated by those skilled in the art that in various alternative embodiments, product codes may be encoded with other graphic symbologies, for example, such as barcode fonts consistent with the PDF417 or QR Product code standards. In one embodiment, both versions of the product code 602 and 604 may be included on the product, label, or product packaging.”</i></p> <p>To one skilled in the art, the “reading” or “scanning” of a bar code symbol in the context of Self is synonymous with both detecting and decoding of the symbol of interest. Self teaches that the portable electronic device has the ability to detect (by virtue of its ability to decipher) the presence of a two dimensional (e.g. QR Code) code. And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device has the ability to detect a bar code symbol within the captured image.</p>
decoding the symbology to obtain a decode string using one or more visual detection applications residing on the portable electronic device;	<p>Through at least the following examples, Self teaches that the symbology is decoded to obtain a decode string (e.g., an “alphanumeric representation” such as “product code 602” which “may be a string of sixteen alphanumeric characters”) using a visual detection application (e.g., “relevant software for QR code reading”) residing on the portable electronic device.</p> <p>Claim 12: <i>“The method of claim 5 wherein the bar code is scannable by an image capturing device.”</i></p> <p>Fig. 6B (above)</p> <p>[0003]: <i>“In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</i></p> <p>[0035-0036]: <i>“Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve</i></p>

'369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>the information in addition to providing authentication of the product.”</i></p> <p>[0044]: “[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</p> <p>[0056]: “The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</p> <p>[0088]: “FIG. 6A illustrates an example of an alphanumeric representation of a product code, according to one embodiment. In one embodiment, the product code may be a string of sixteen alphanumeric characters consisting of numbers and letters, such as the product code 602.”</p> <p>[0089]: “FIG. 6B illustrates an example of an alphanumeric representation of a product code/URL 604 encoded as a graphic symbol, according to one embodiment.”</p> <p>To one skilled in the art, the “reading” or “scanning” of a bar code symbol in the context of Self is synonymous with both detecting and decoding of the symbol of interest. Self teaches that the portable electronic device has the ability to decode the symbol into a string (data) using means and methods that exist on the device. And to the extent that Self doesn’t explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device must have the ability to decode the detected bar code symbol.</p>
sending the decode string to a remote server for processing;	Through at least the following examples, Self teaches sending the decode string to a remote server (e.g., “server module 100”) for processing.

<p>'369 Patent</p>	<p>U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007</p>
	<div data-bbox="557 277 1049 674"> <pre> graph TD 108((108)) --- 106[Consumer Device 106] 106 --- 110((Network 110)) 104[Distributor 104] --- 110 100[Server Module 100] --- 110 102[Client 102] --- 110 </pre> </div> <p style="text-align: center;">FIG. 1</p> <p>Fig. 3B (above)</p> <div data-bbox="547 867 1101 1339"> <pre> graph TD 322[Receive a Request for a Product Information Associated with a URL 322] --> 324[Associate the Received URL with the Product Information of the Item or Package 324] 324 --> 326[Verify Authenticity of the URL 326] 326 --> 328[Provide Authenticity Information of the URL 328] 328 --> 330[Process Information Associated with the Request Such as Identity of the Requestor, Location of the Request, Time of the Request 330] 330 --> 332[Providing at Least a Portion of Product Information Associated with at Least a Portion of the URL Based on Information Associated with the Request 332] </pre> </div> <p style="text-align: center;">FIG. 3C</p> <p>[0003]: “In one example, bar codes (e.g., QR codes) are used to encode URLs for capture and efficient decoding by a camera phone (e.g., an off the shelf camera phone) having the relevant software for QR code reading. The decoded URL can then be accessed by the camera phone through a network.”</p> <p>[0013]: “FIG. 1 illustrates an example of a consumer device and/or a client communicating with a server module</p> <p>[0035-0036]: “Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the</p>

'369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	<p><i>associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product."</i></p> <p>[0044]: <i>"[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone."</i></p> <p>[0045]: <i>"FIG. 1 illustrates an example of a consumer device 106 and/or a client 102 communicating with a server module 100 to access product information coding and authentication services through a network 110, according to one embodiment."</i></p> <p>[0049] <i>"The network 110, over which the client 102, the consumer device 106 and the server module 100 communicate..."</i></p> <p>[0051]: <i>"...communicating a request to the server module 100..."</i></p> <p>[0055]: <i>"The consumer device 106 may be any device having networking capabilities (e.g., mobile phone, PDA, notebook, desktop computer, etc.) able to send a product code/URL that is to be authenticated through the network 110 to the server module 100."</i></p> <p>[0056]: <i>"The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed."</i></p> <p>[0074]: <i>"In process 322, the coding service provider receives a request for product information associated with a URL. In operation 324, the received URL is associated with the product information of the item or package. In operation 326, authenticity of the URL is verified."</i></p> <p>To one skilled in the art, discussions pertaining to the sending or transmission of information (data) implies that there HAS to be a</p>

'369 Patent	U.S. Patent Application Publication 2007/0215685 (Self et al.) Published September 20, 2007
	remote (physically disparate) device (e.g. computer, server, website, etc.). Self teaches that the portable electronic device is able to transmit the decoded information to a remote server. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the electronic device would have the means to send the decoded string to a remote server.
receiving information about the digital image from the remote server wherein the information is based on the decode string;	<p>Through at least the following examples, Self teaches that the portable electronic device will be able to receive from the remote server information about the object that is based on the decode string (e.g., "the product information about the item or package associated with the URL").</p> <p>Fig. 1 (above), Fig. 3B (above), Fig. 3C (above)</p> <p>[0003]: <i>"The decoded URL can then be accessed by the camera phone through a network. Since use of camera phones has become widespread, information encoded with QR codes can be conveniently read by anyone carrying a cellular phone with a camera. This method is typically used to provide a link to a web page containing more information about an advertisement of a product or service in a magazine, newspaper, or other printed publication."</i></p> <p>[0013]: <i>"FIG. 1 illustrates an example of a consumer device and/or a client communicating with a server module to access product identification services using a URL ..."</i></p> <p>[0035-0036]: <i>"Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product."</i></p> <p>[0044]: <i>"[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone."</i></p> <p>[0051]: <i>"...communicating a request to the server module 100..."</i></p>

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displaying the information on a display device associated with the portable electronic device.	<p>Through at least the following examples, Self teaches that the portable electronic device displays the received information on a display device (e.g., "displayed on the verification screen") associated with the portable electronic device.</p> <p>[0035-0036]: <i>"Bar codes known as QR codes are used to encode URLs in a machine-readable printed format. The barcodes can be read with off-the-shelf camera phones. For example, if the bar code contains a URL, the camera phone can automatically retrieve the associated webpage from a network. ... When the URLs are encoded</i></p>

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	<p><i>as bar codes, an off-the shelf camera phone can be used to retrieve the information in addition to providing authentication of the product.”</i></p> <p>[0044]: <i>“[T]he product code is marked as a bar code and the information is retrieved from the computer system by reading the bar code with a camera phone.”</i></p> <p>[0056]: <i>“The product code/URL may be captured by the consumer device 106 in various methods ... a camera, and/or a bar code reader. ... In another embodiment, the product code may be authenticated via a webpage access of data maintained by the server module 100 to locate information associated with the product having the particular product code. Furthermore, the product code can be represented by a bar code that is scannable by an image capturing device.... In one embodiment, the bar code is a 2D bar code in a QR format that is able to be read by camera phones with QR reading capabilities. The URL associated with the QR code can then be decoded and the web page can be accessed.”</i></p> <p>[0057]: <i>“In addition to communicating authentication results to the consumer device 106, alternate information revealed during the decryption process, such as product information, expiration date, manufacturing location, may also be communicated to the consumer device 106 and displayed accordingly.”</i></p> <p>[0058]: <i>“Furthermore, product information including the brand, type of product, UPC code is also determined and displayed on the verification screen. In one embodiment, a product image is also displayed.”</i></p> <p>Self teaches that the portable electronic device is able to display the received information. And to the extent that Self doesn't explicitly use the exact same verbiage, one skilled in the art would immediately understand that the device was able to display information on a graphical display.</p>